

GUIDE SHEET

APRIL 1963

FOR INSERTION OF 30 NEW PAGES IN SEEBURG SERVICE MANUALS

SECTION	INSERT	FOLLOWING PAGE:
Phonograph	1451 to 1454 Issue 3 1455 to 1456 Issue 2	Replace 1451 to 1454 Issue 2 Replace 1455 to 1456 Issue 1
Mechanism	2489 to 2490 Issue 2 2503A 2513 to 2516 Issue 2	Replace 2489 to 2490 Issue 1 2504 Replace 2513 to 2516 Issue 1
Electrical Selectors	3177 to 3178 Issue 2 3183 to 3184 Issue 2	Replace 3177 to 3178 Issue 1 Replace 3183 to 3184 Issue 1
Amplifiers	4101 to 4102 Issue 4	Replace 4101 to 4102 Issue 2
Remote Speakers	7061 to 7066	7060
Wallboxes	12117 to 12132	12116
Power & Control Units	13043 to 13046 Issue 2	Replace 13043 to 13046 Issue 1
Microphone & Paging Systems	14083 to 14090	14081
Coin Counters	15007 to 15008 Issue 2	Replace 15007 to 15008 Issue 1
Selection Control Units	16055 to 16058 Issue 2	Replace 16055 to 16058 Issue 1

REQUEST FOR CHANGE OF ADDRESS

SERIAL NUMBER OF MANUAL

NAME _____

Old Address
(please print)

STREET _____

CITY _____

STATE _____

(Be sure to give your old address)

NAME _____

New Address
(please print)

STREET _____

CITY _____

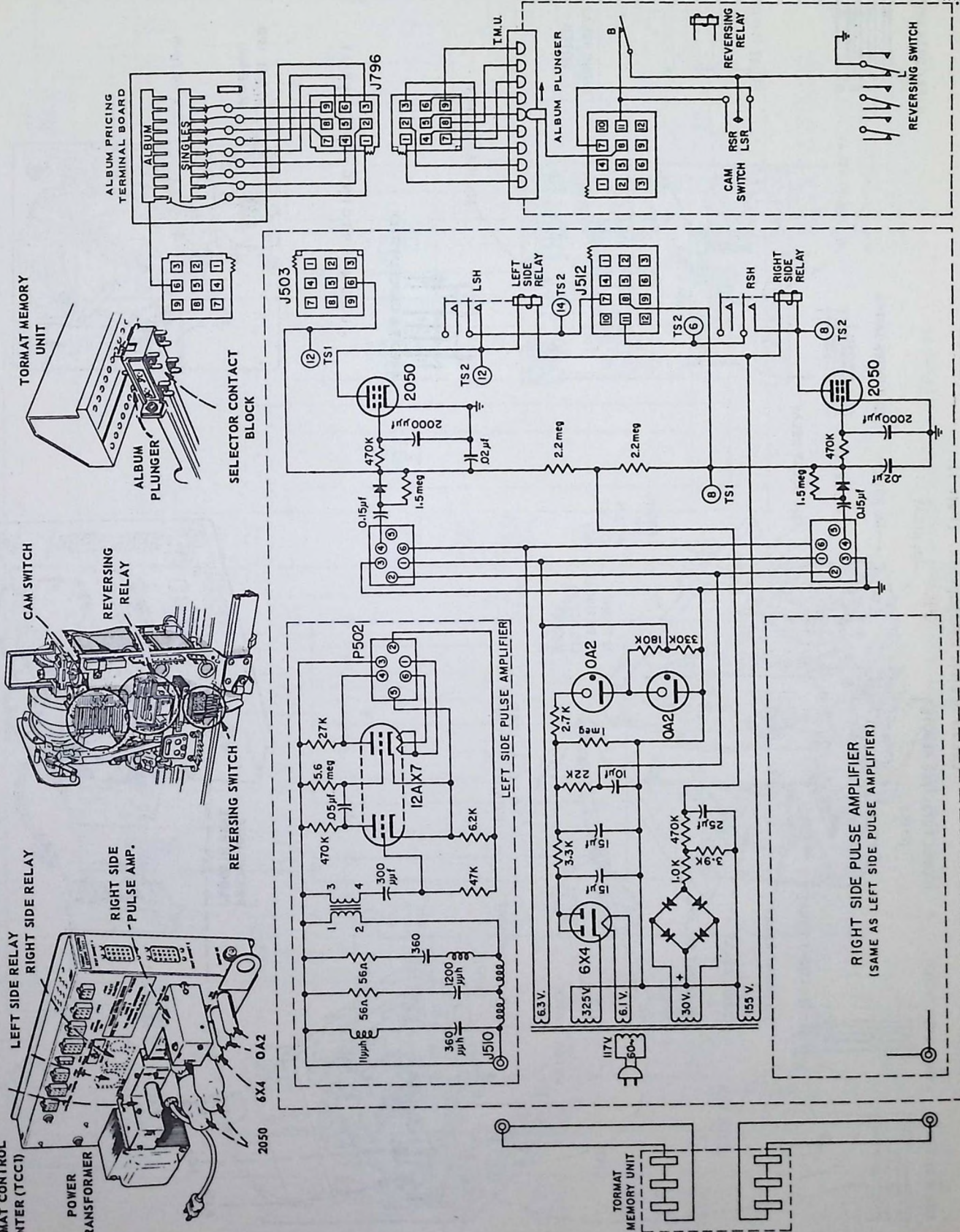
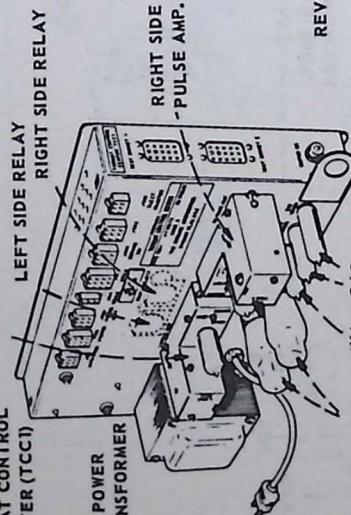
STATE _____

THIS FORM TO BE SENT TO:

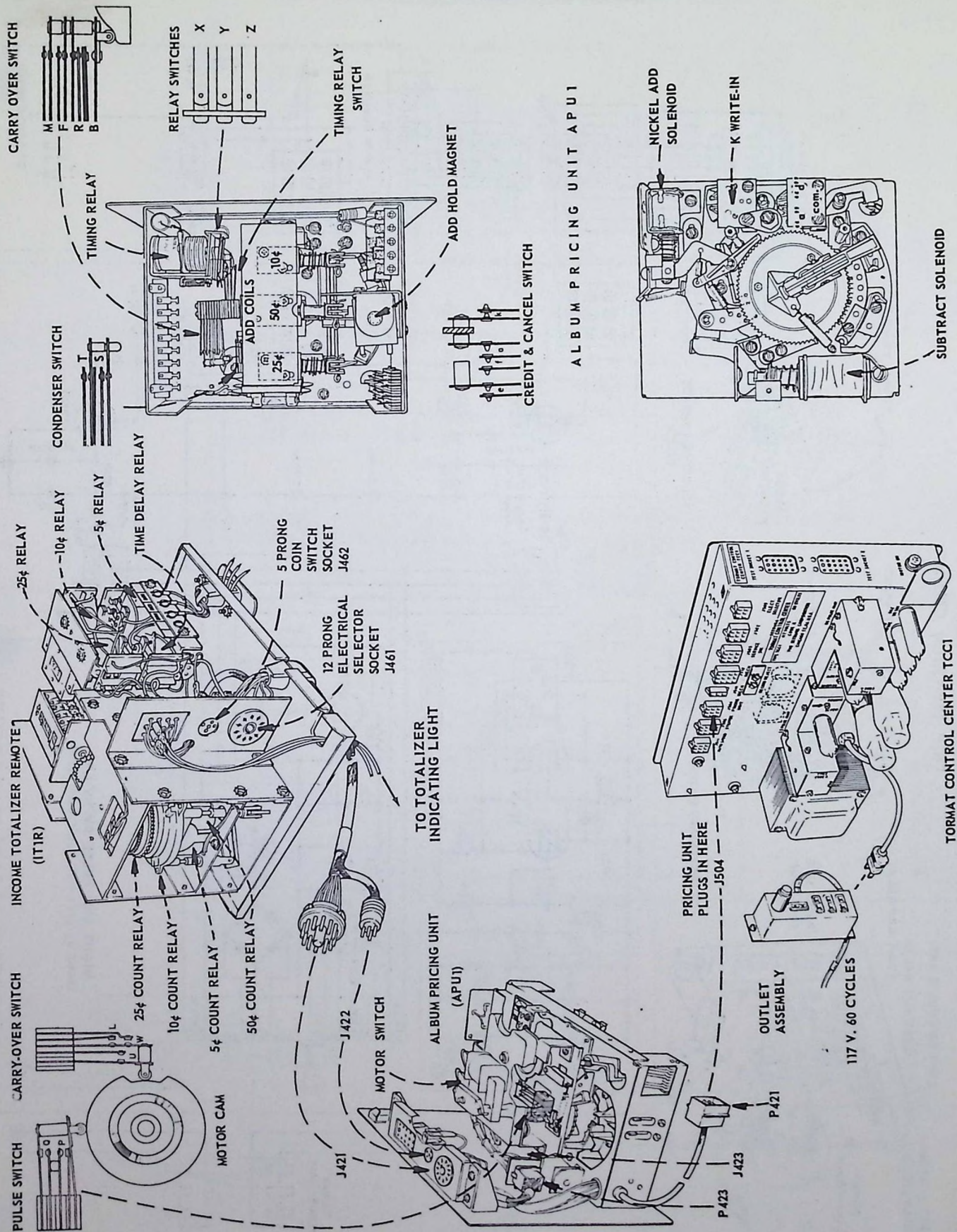
SERVICE MANUAL DEPARTMENT

THE SEEBURG SALES CORPORATION

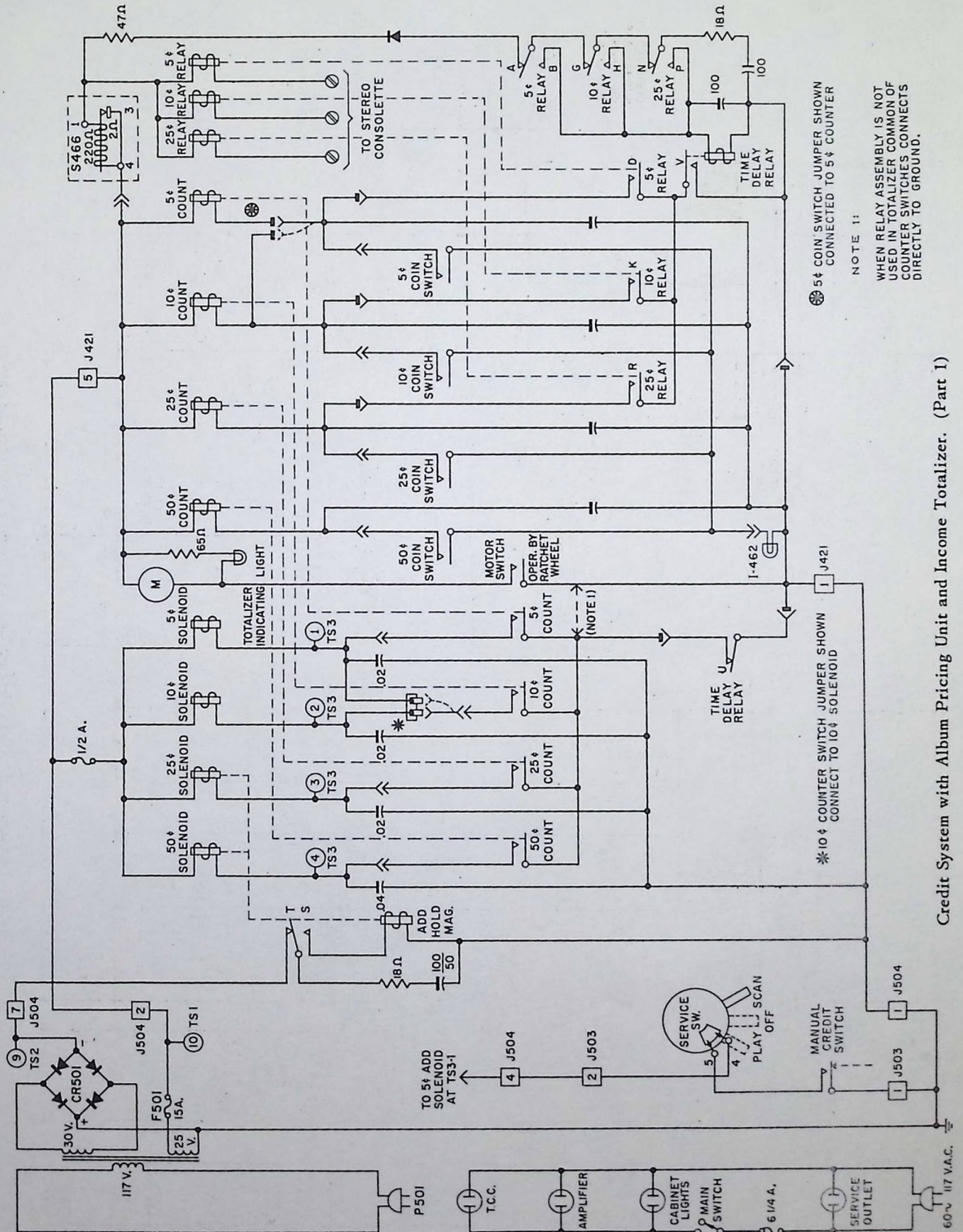
1510 NORTH DAYTON STREET - CHICAGO, ILLINOIS



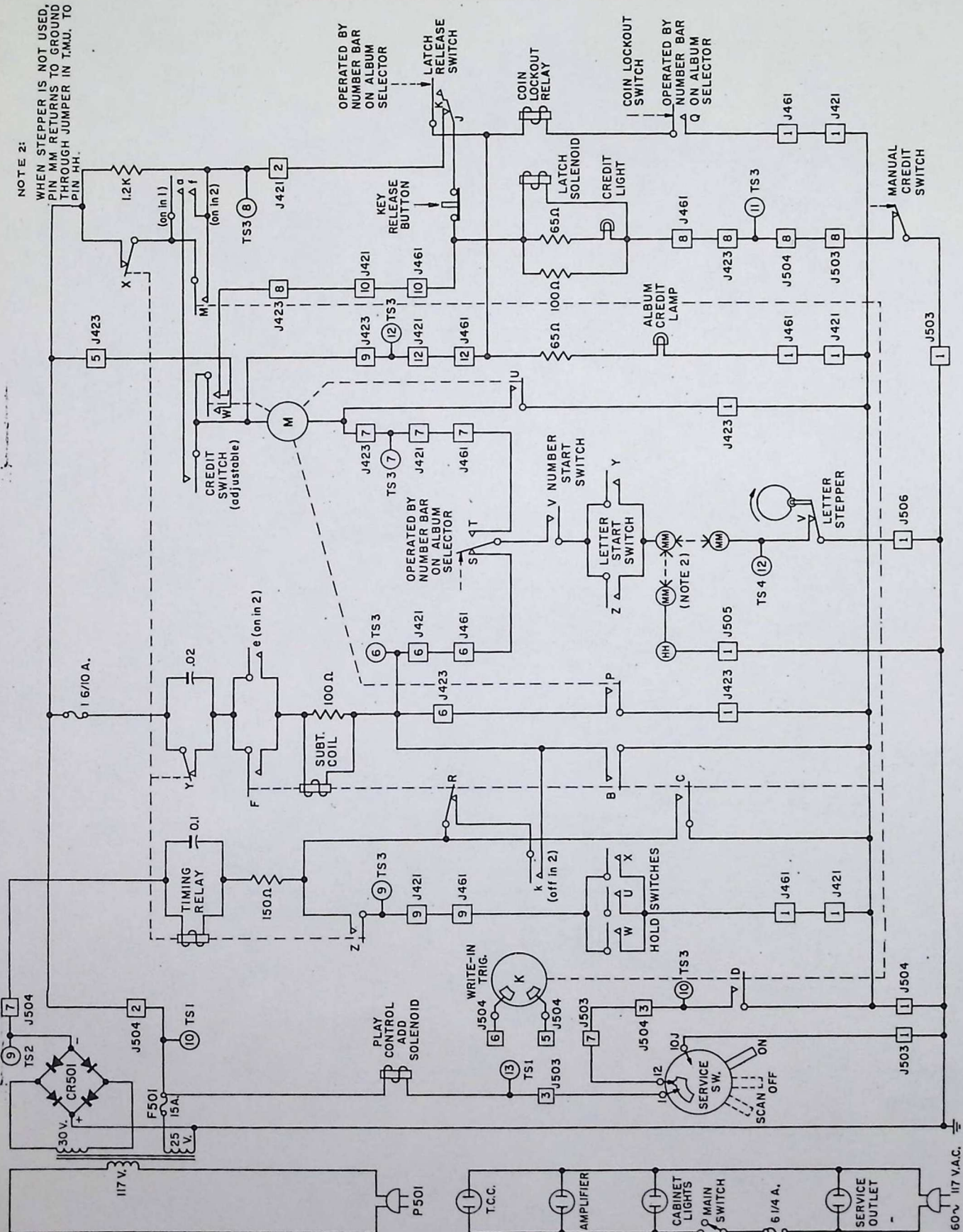
Credit System Components. (Part 1)



SELECT-O-MATIC MODELS LPC1 and LPC1R

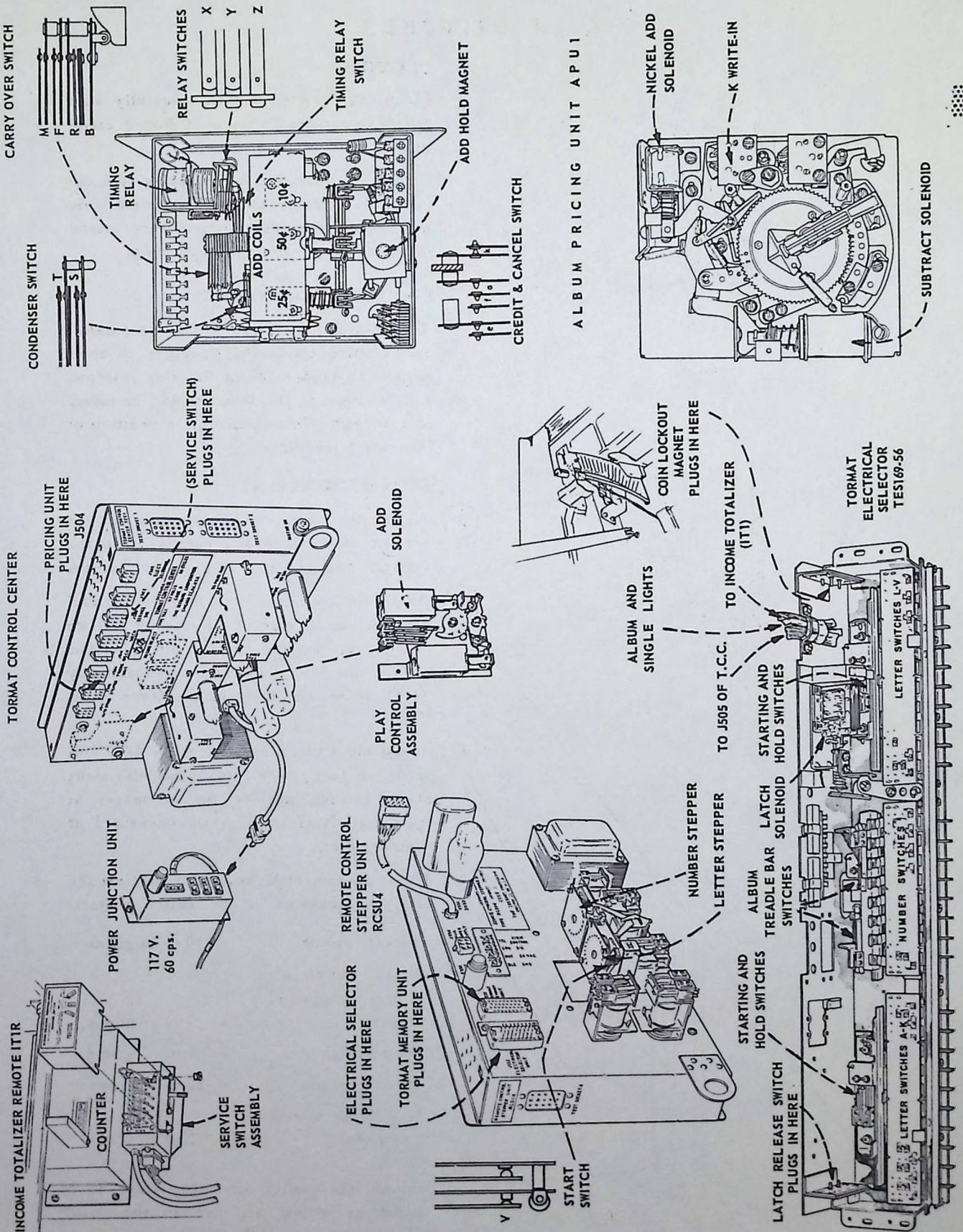


SELECT-O-MATIC MODELS LPC1 and LPC1R



Credit System with Album Pricing Unit and Income Totalizer. ... (Part 2)

Credit System Components. (Part 2)

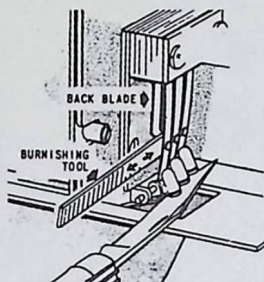


COIN SWITCHES

CLEANING

Clean the switch contacts carefully with carbon tetrachloride using a No. 2 camel hair brush.

Burnish by inserting a burnishing tool between the contacts, raising the switch lever with a knife blade as shown. *Never use a file or sandpaper for contact cleaning.*



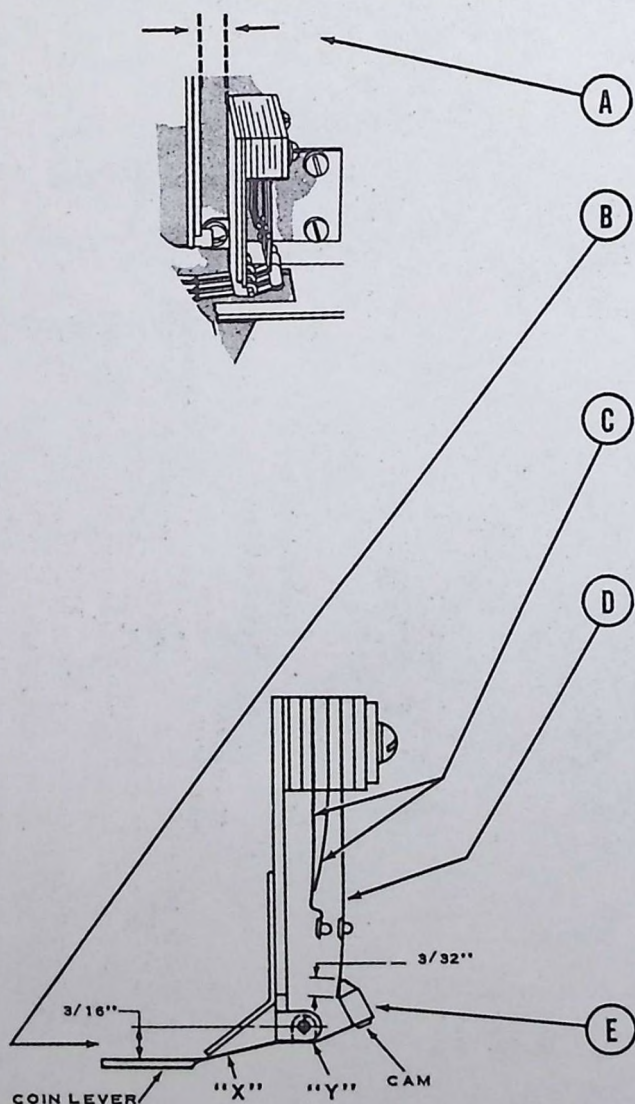
COIN LEVER ALIGNMENT

The coin switch levers should be parallel and centered with the openings of their respective coin exits in the slug rejector. Lateral play of the lever should be taken into account when checking the position of the switch levers.

SWITCH ADJUSTMENT

- A** Adjust the coin switch mounting so the bracket is vertical and parallel with the vertical edge of the slug rejector frame.
- B** Adjust the coin levers so they are parallel with the bottom edge of the rejector and are bearing against the bracket at "X". The ends of the levers should be approximately $3/16''$ below the level of the lever pivot, "Y".
- C** Adjust short blade and bracer for $1/32''$ to $3/64''$ contact gap (all switches) with short blade bearing against tip of bracer at approximately 2 to 3 grams (measured at contact point).
- D** Adjust the long blade so it bears against the cam, as measured at the switch contact:

Nickel switch	- 10 to 14 grams
Nickel switch (with flipper equipped slug rejector)	- 5 to 7 grams
Dime switch	- 5 to 7 grams
Quarter switch	- 12 to 16 grams
Half Dollar switch (not shown)	- 12 to 16 grams



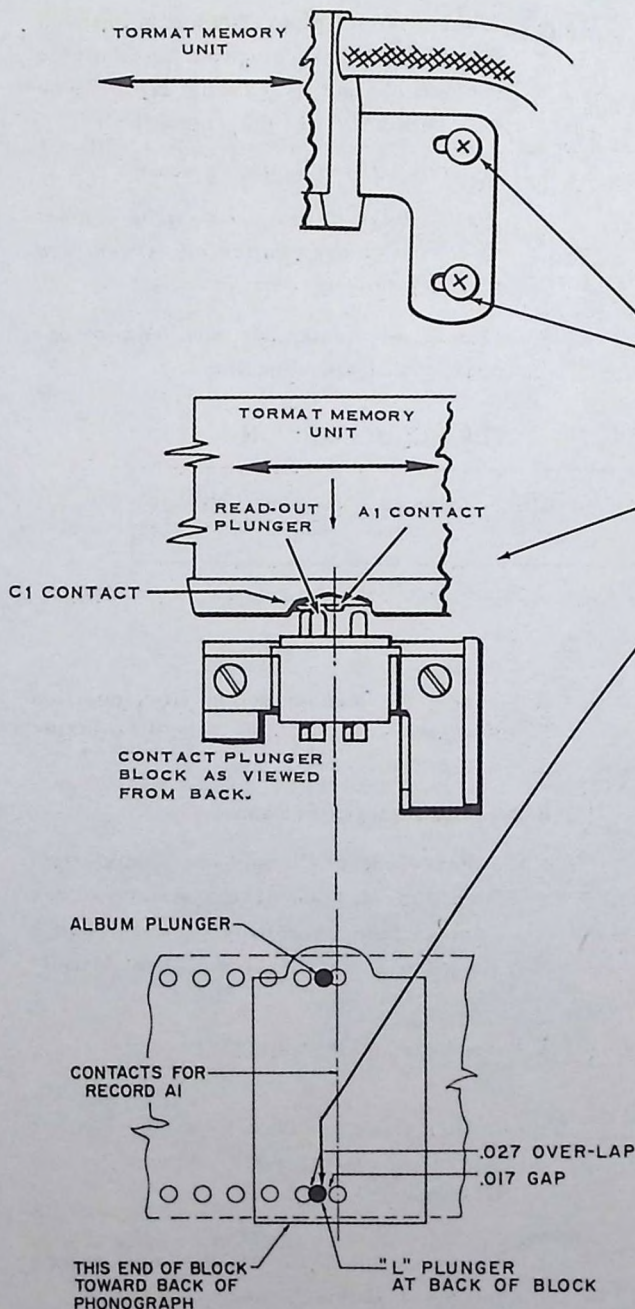
E Adjust the switch actuating cams to be tilted as shown and overlap the switch blade approximately $3/32''$.

SELECT-O-MATIC MECHANISM ADJUSTMENTS

"TORMAT MEMORY UNIT POSITION"

This adjustment positions the Tormat Memory Unit so the contact plungers and Tormat contacts will be correctly aligned for tripping the mechanism at the selected record.

NOTE: If for any reason the Tormat Memory Unit is removed from the mechanism the Contact Plunger Block adjustments must be checked and, if necessary, corrected before making the Tormat adjustment. This may be done with a preliminary lateral adjustment of the unit by placing the mechanism at A1 and mounting it on the magazine with rear plunger just touching contact rivet for adjacent selection (to the left of the contact for A1).



NOTE 1: The Tormat Memory Unit and the Contact Plunger Block positions are related so each must be checked if any one is changed.

NOTE 2: Check "Clutch 3" for minimum carriage side play also check "Magazine" and "Transfer Arm 1" adjustments before making this adjustment.

- A** Place the mechanism in PLAY position at record space A1 and turn off power.
- B** Loosen the two mounting screws at each end of the Memory Unit.
- C** Adjust the lateral position of the Unit so the Read-out contact plunger is to the left* of the A1 contact with approximately 1/64 inch gap between the Read-out plunger and the contact to its right.
- D** Place the mechanism in PLAY position at the record position next to the last one on the left* and check the Read-out contact plunger relative to the Memory Unit contacts. It should duplicate position described above. Exact plunger positioning is not necessary but if it is not the same at both end positions shift the Memory Unit, as required so the variation at gap is equally divided at both ends of the magazine.

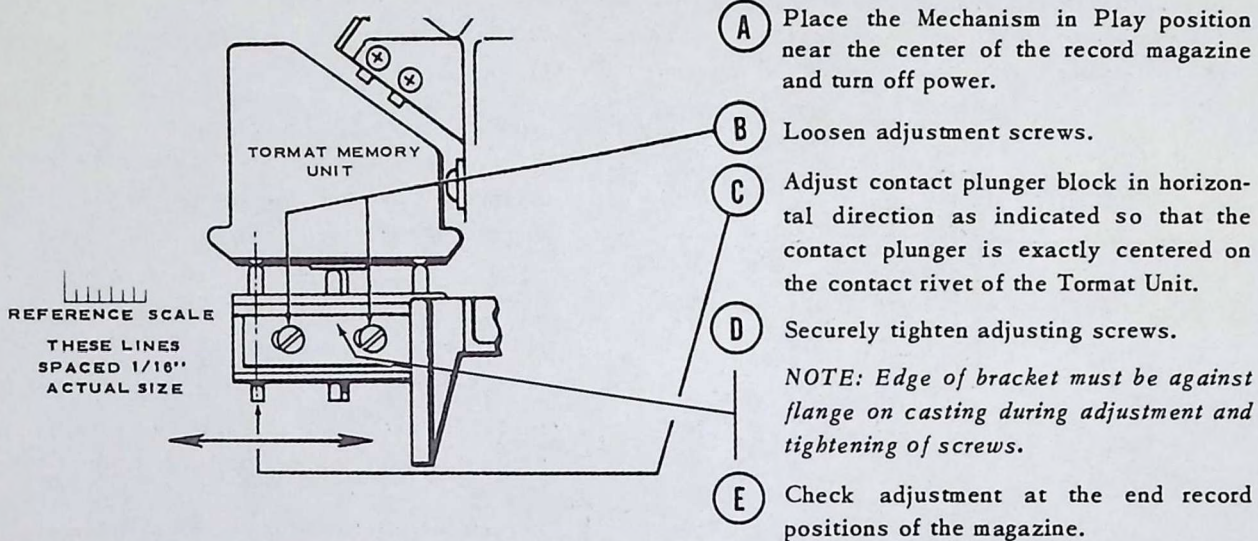
* As viewed from the back of the phonograph.

SELECT-O-MATIC MECHANISM ADJUSTMENTS

"CONTACT PLUNGER BLOCK 1" - HORIZONTAL POSITION

This adjustment positions the Contact Plunger Block horizontally (front to back) and determines proper alignment of the contact plunger and the Tormat contact rivets.

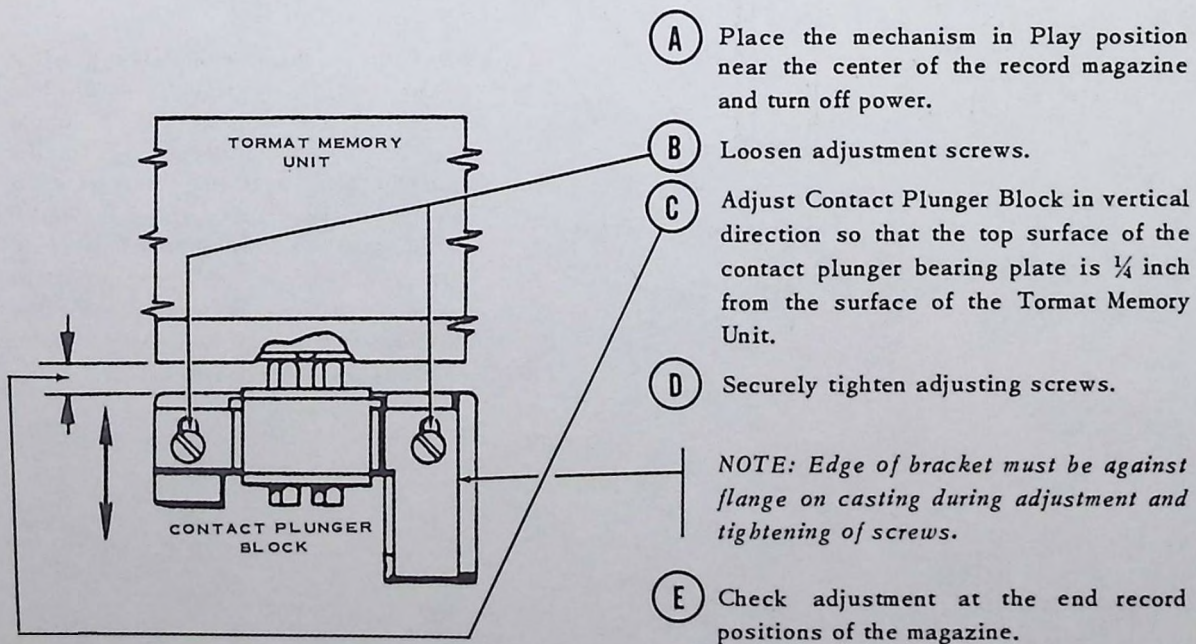
NOTE: The Tormat Memory Unit and the Contact Plunger Block positions are related so each must be checked if any one is changed.



"CONTACT PLUNGER BLOCK 2" - VERTICAL POSITION

This adjustment positions the Contact Plunger Block vertically to assure proper contact pressure and movement of the plungers.

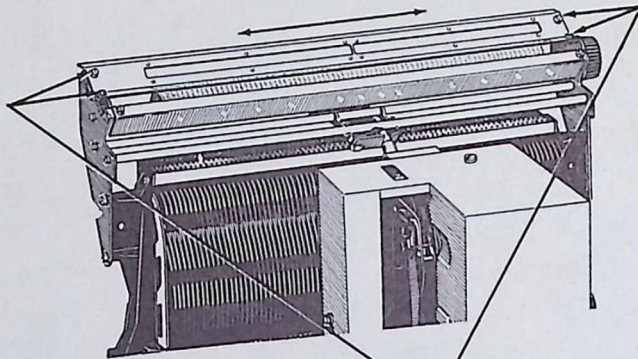
NOTE: The Tormat Memory Unit and the Contact Plunger Block positions are related so each must be checked if any one is changed.



SELECT-O-MATIC MECHANISM ADJUSTMENTS

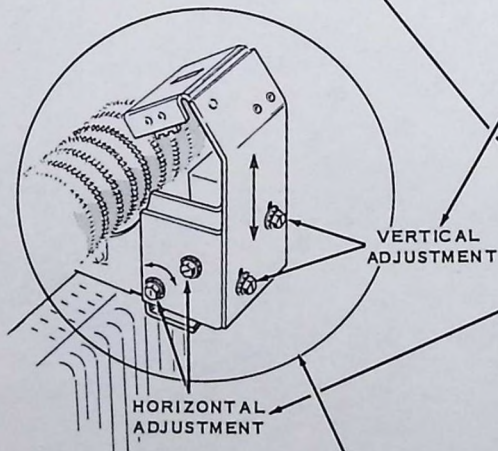
"RECORD PLAYING INDICATOR"

This adjustment aligns the Record Playing Indicator Lamp with the Indicator Strip.



A

Place the mechanism in record playing position for record A5 and remove the motor connection plug from the Tormat Control Center so the motor is not running.

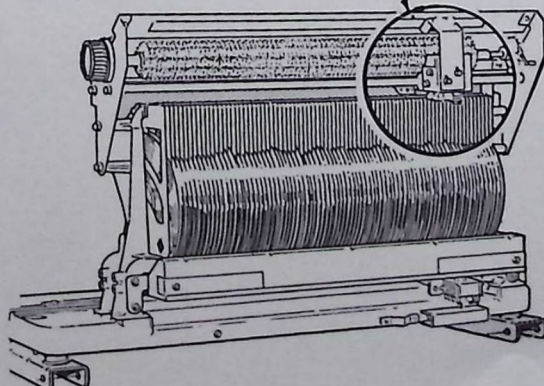


B

Loosen the screws for the vertical and horizontal adjustments and position the bracket so the aperture plate is close to and parallel with the indicator strip. The plate should be close to the strip but must not touch it or rub on it as the carriage scans. Tighten the screws.

C

Loosen four (4) screws for the lateral adjustment of the Indicator Panel Assembly. Adjust the panel position so the light is correctly and evenly centered to illuminate the A5 space. Tighten the screws. Check on selections A1 and U8.



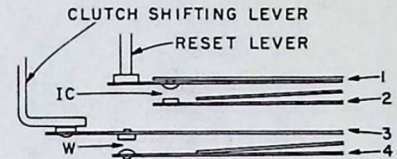
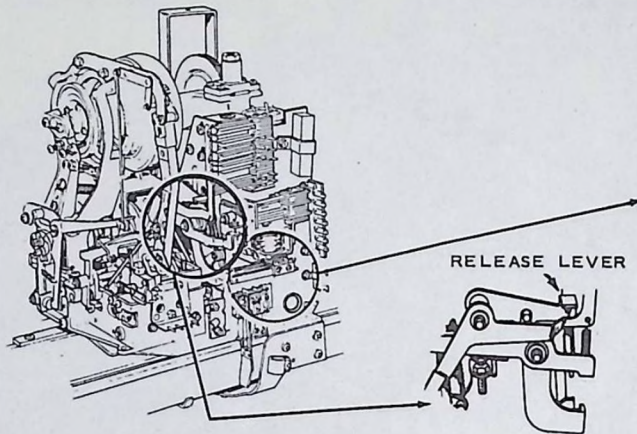
D

Check normal scanning operation to be sure the Indicator Aperture Plate does not drag or rub on the Indicator Channel.

SELECT-O-MATIC MECHANISM ADJUSTMENTS

"CLUTCH AND RESET LEVER SWITCHES"

CONTACT GAP AND PRESSURE ADJUSTMENT



NOTE: "Clutch 1" to "4" Mechanical Adjustments must be correct before adjusting these switches.

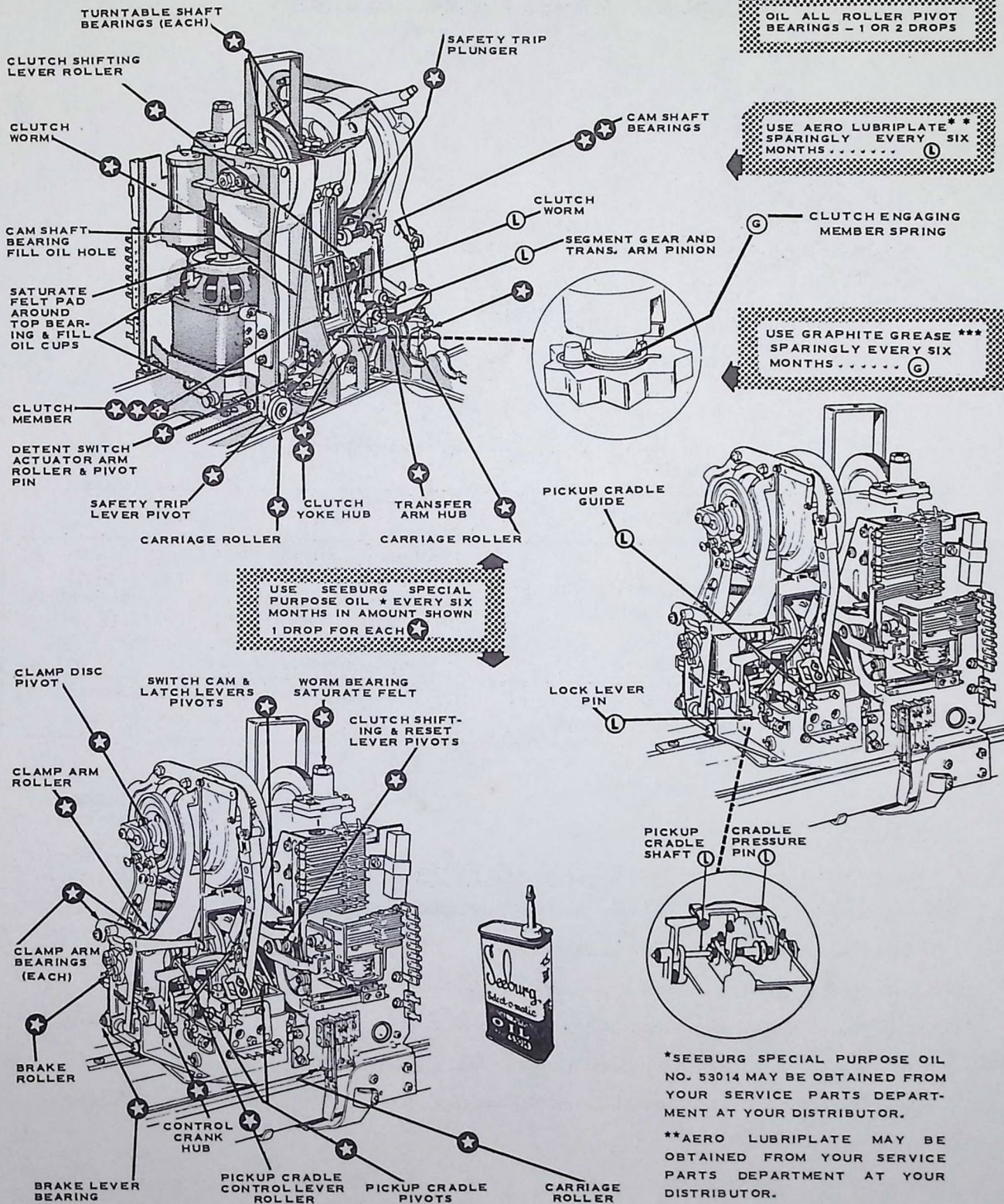
CONTACTS	CONTACT GAPS	CONTACT FUNCTIONS
IC	3/64" gap when mechanism trips. Closed in SCAN and PLAY positions.	Allows operation of Popularity Meter Solenoid when mechanism is transferring into PLAY position but prevents "Extra" operation when mechanism is transferring out of PLAY position. Also opens ground return of Auto-Speed Unit power control relay circuit.
W	1/64" gap in PLAY position. Closed 1½ oz. pressure in SCAN position.	Part of Trip Solenoid Circuit. Opens circuit when mechanism trips from SCAN position.

ADJUSTMENT PROCEDURE:

- Place mechanism in SCAN position and TURN OFF POWER.
- Trip by manually lifting Release Lever. While mechanism is in this position:
 - Bias blade 1 to within 1/16 inch of Reset Lever.
 - Bias blade 2 against bracer blade and adjust blade 2 for 1/16 inch gap between IC contacts.
- With mechanism tripped as in step 2, turn motor shaft manually until mechanism is in PLAY position.
 - Bias blade 3 so its lift bears against Clutch Shifting Lever with 1½ ounce pressure.
 - Bias blade 4 against its bracer blade and adjust bracer blade for 1/64 inch gap between W contacts.

REFERENCE SCALE
THESE LINES
SPACED 1/64"
ACTUAL SIZE

LUBRICATION CHART



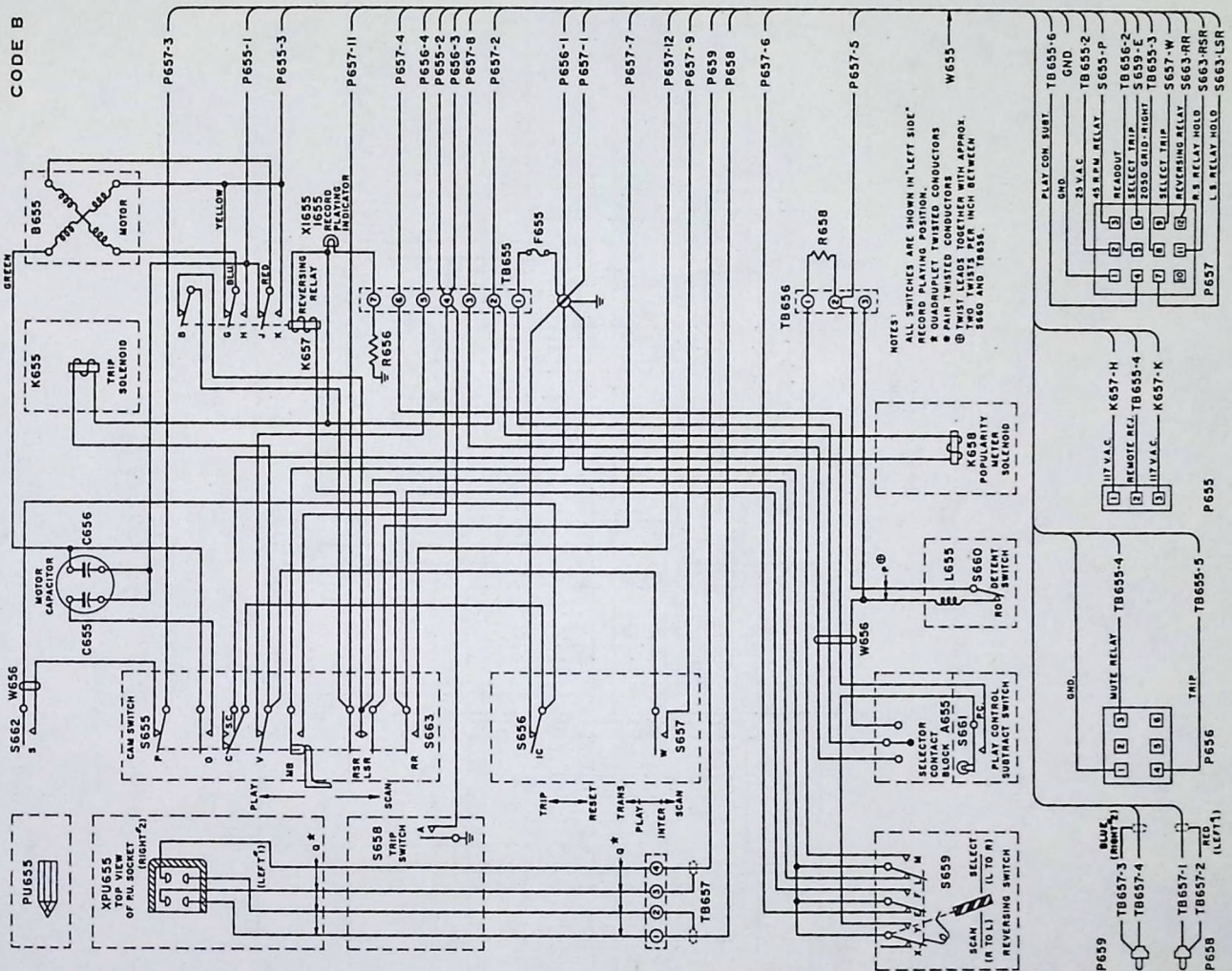
*SEEBURG SPECIAL PURPOSE OIL NO. 53014 MAY BE OBTAINED FROM YOUR SERVICE PARTS DEPARTMENT AT YOUR DISTRIBUTOR.

**AERO LUBRIPLATE MAY BE OBTAINED FROM YOUR SERVICE PARTS DEPARTMENT AT YOUR DISTRIBUTOR.

***LUBRICATE CLUTCH ENGAGING MEMBER SPRING USING GRAPHITE GREASE, EVERY SIX MONTHS, SEEBURG PART NO. 53002 OBTAINED FROM YOUR SERVICE PARTS DEPARTMENT AT YOUR DISTRIBUTOR.

SELECT-O-MATIC MECHANISM, Type 133S1

DRAWING NO. 252090
CODE B



PARTS LIST

Item	Part No.	Description
A655	25 2082	Contact Block Assem.
B655	25 2413	Motor Assembly
C655	86 321	1.65 mfd Motor Capacitor
C656	0.75 mfd Motor Capacitor	
F655	24 7850	Fuse - 5 Amp
I 655	50 7522	Indicator Lamp (No 19)
K655	24 5578	Trip Solenoid
K657	24 5939	Reversing Relay
K658	24 9122	Pop. Meter Solenoid
L655	30 3702	Choke 100 μ Henry
P655	80 3726	Three Contact Cap
P656	48 7338	Six Contact Cap
P657	30 7048	Twelve Contact Cap
P658	25 2922	Single Prong Plug
P659	25 2922	Single Prong Plug
PU655	24 9755	Magnetic Pickup
R656	8 1248	190 ohm 15 W. $\pm$ 5%
R658	8 2432	4700 ohm 1/2 W. $\pm$ 10%
S655	25 2926	Cam Switch
S656	25 2927	Reset Lever Switch
S657	25 2927	Clutch Switch
S658	24 5816	Trip Switch
S659	24 7846	Reversing Switch Assem.
S660	24 9235	Detent Switch
S661	24 8127	Play Control Substrat Sw.
S662	25 2409	Clamp Arm Switch
S663	25 2910	Lower Cam Switch
TB655	30 5113	Terminal Strip
TB656	37 5299	Terminal Strip
TB657	30 5112	Terminal Strip
W655	25 2915	Control Cable
W656	25 2923	Internal Cable
XI 655	25 2134	Light Housing & Brkt. Assem.
X PU655	24 9727	PU Cartridge Socket Assembly

SELECT-O-MATIC MECHANISM, Type 133S1

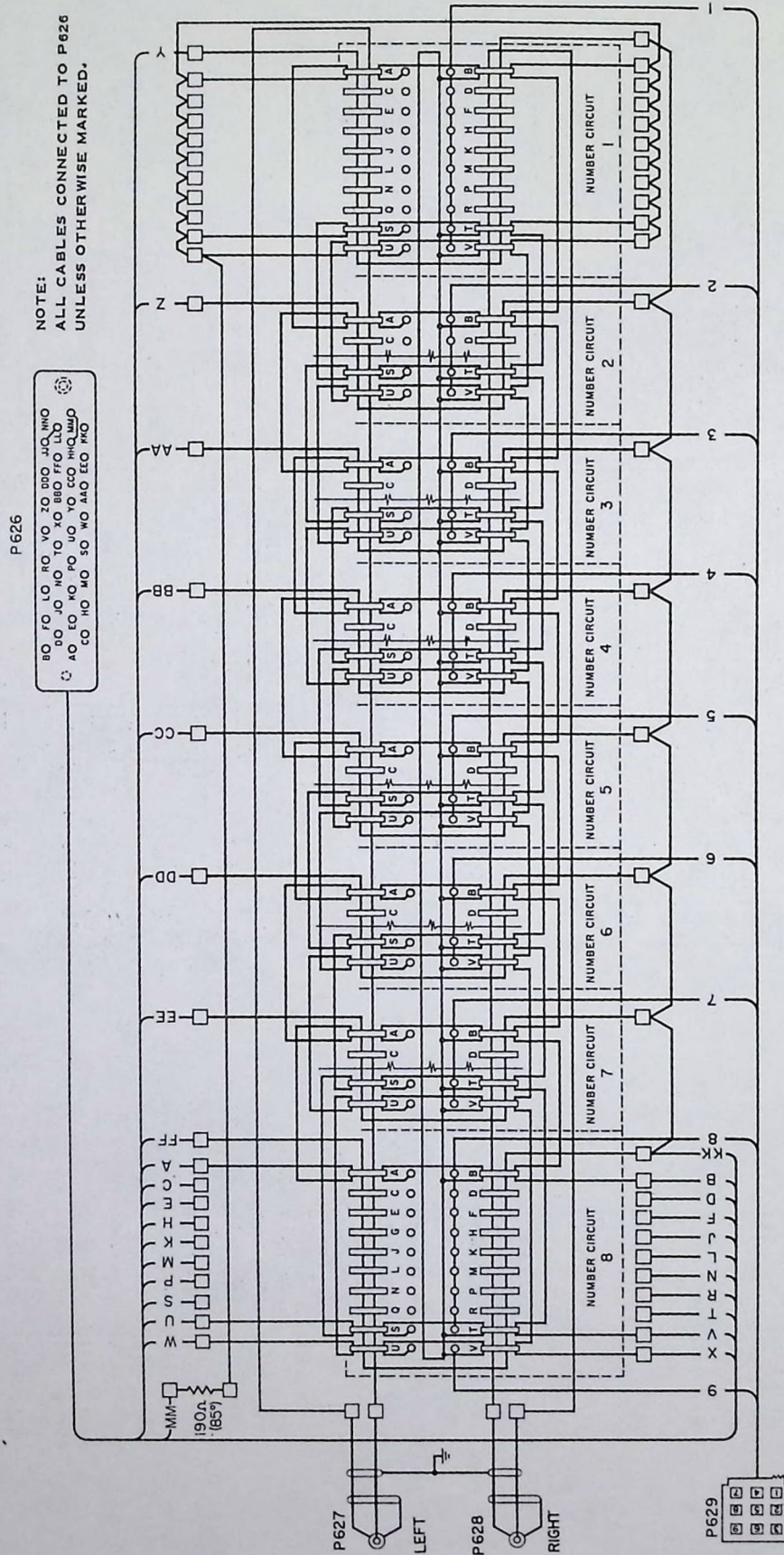
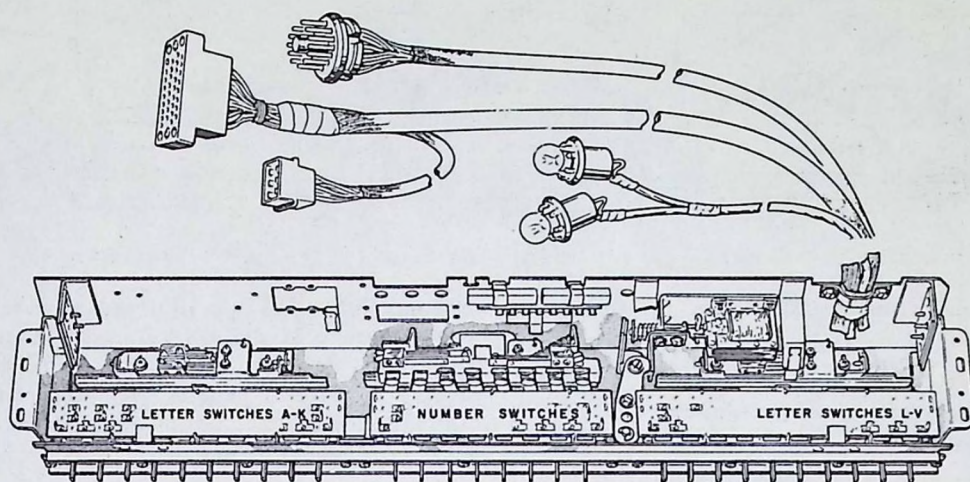


DIAGRAM - TORMAT MEMORY UNIT, Type 160TM2

SEEBURG

TORMAT ELECTRICAL SELECTOR, Type TES169-56



The Tormat Electrical Selector, Type TES169-56 is part of the Seeburg Tormat Selection System. The principal functions of the selector is to connect a letter and a number circuit of the Tormat Memory Unit into a selection write-in circuit and to complete a circuit that initiates the operational sequence of the system. These functions are performed when two of the selection switches are operated by pressing a lettered selector key and a numbered key.

The principal parts of the selector include three selection switch assemblies, a latch bar solenoid, credit indicating lights, three switch groups each of which has two pairs of contacts, a write-in switch, a pricing switch, a coin lock-out switch, a latch release switch, a terminal board for connecting a key release button and a terminal board for connecting a coin lockout solenoid. The key release button and the coin lockout solenoid are mounted on the selector panel in the phonograph.

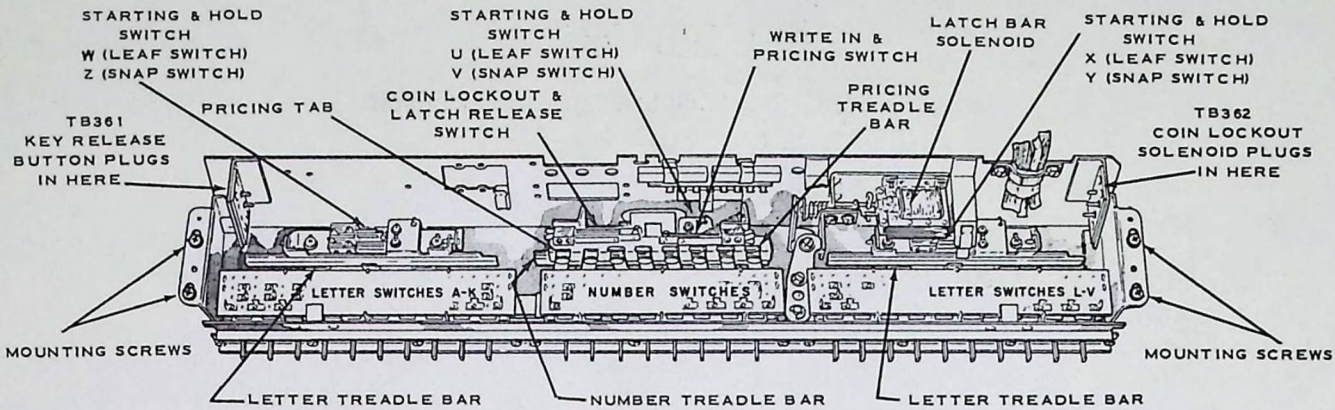
The credit indicating lights are extended on their own connecting leads so that they illuminate the selection information window that is in the selector panel casting at the right of the selector keys. They are 6-volt lamps operated at 25 volts through 65-ohm resistors.

The latch bar function is to hold a selection switch (and selector key) in the pressed-in position when a selection is being made and to release it when the selection operation sequence is completed. The bars in the two letter switch assemblies are coupled end-to-end so they operate as single continuous bar. The latch bar

of the number switch is independent of the letter switches but the bars in both letter and number switches are linked to and controlled by the latch bar solenoid. The linkage between the solenoid and the bars is spring biased so the bar position permits free in and out movement of the selection switches when the solenoid is not energized. The solenoid is energized, when credits are set up in the phonograph and the bars move to a position in which they will hold a pressed-in switch in the operated position. In the letter switch groups, however, the bars are designed so a latched-in switch will be released if another switch in the same letter group is pressed in. The number switch group is designed so a latched-in switch cannot be released until the latch solenoid is de-energized, releasing all switches.

The shafts or stems of the selector switches extend through the switch frame. They operate a treadle bar when a selector key is pressed and the treadle bar, in turn, operates a switch group consisting of a spring-leaf switch and a snap-action, over-center switch. One of the three switch groups is associated with each of the three selection switches and operates when a selector key is pressed. The three spring-leaf switches in the two switch groups are parallel connected and are part of a timing relay holding circuit that is completed through interlocking contacts on the relay when any one of the selector keys is pressed. These switches are the Hold Switches, contacts U, X and W.

TORMAT ELECTRICAL SELECTOR, Type TES169-56



The snap-action switches are the Starting Switches, contacts V, Y and Z. The Y and Z contacts are operated by the Letter Selection Switches and are parallel connected so one or the other closes whenever a Letter Selector Key is pressed. The V contact is closed by pressing any Number Selector Key and is in series with the parallel connected Y and Z contacts. These contacts are part of a circuit that includes a Subtract Solenoid or a Cancel Solenoid in the phonograph's Pricing Unit. When a letter key and a number key are pressed, the starting switches complete the circuit to the solenoid which, when energized, closes switch contacts that control the power to the Tormat Memory Unit, and the timing relay. They also close, momentarily, the circuit for a play control add solenoid that, in turn, controls, through a play control unit, the power to the mechanism motor.

The Write-in and Pricing Switch together with the Coin Lockout and Latch Release Switch are operated by a pricing treadle bar which in turn is actuated by the number selector switch stems. The "T" and "S" contacts of the Pricing Switch, S367, are in the "starting" circuit of the Electrical Selector. The "S" contact is normally closed and connects the starting circuit to the subtract solenoid in the Album Pricing Unit. Tabs on the Pricing Treadle Bar may be positioned so that the switch is actuated when a number selector button (1 to 8) is pressed. When actuated, the switch transfers the starting circuit, through the "T" contact, to the motor circuit in the Album Credit Assembly of the Album Pricing Unit, thus providing for album pricing.

The normally closed "R" contact in the Pricing Switch is in the write-in circuit of the

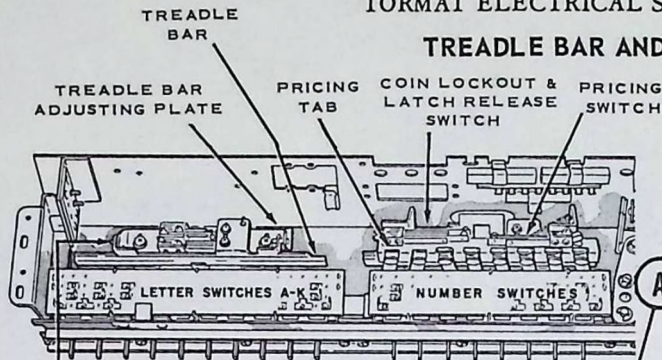
phonograph and is in parallel with a pulse switch ("Q" contact in the Album Credit Assembly). When the Pricing Switch is actuated, the "R" contact opens and permits the "Q" contact in the pulse switch to function for write-in control when an Album is selected.

The Latch Release Switch, "K" contact, is normally open and the "J" contact is normally closed to maintain a circuit for 25 V. from the Single Credit Switch (in the Pricing Unit) to the Key Release Button and the latch solenoid. This switch is not disturbed when a single selection is made; however, when activated by the pricing treadle bar, the "K" contact closes to complete a circuit from the Album Credit Switch (in the Pricing Unit) to the Key Release Button and the latch solenoid, the "J" contact opens to break the circuit from the Single Credit Switch (in the Pricing Unit). Effectively the switching de-energizes the latch bar solenoid permitting the selector keys to unlatch if an Album selection is attempted with insufficient Album credit on the phonograph.

If a number button is pressed before a letter button and it is desired to switch to another number, pressing the Key Release Button, located on the selector panel, will de-energize the latch bar solenoid, the selector keys will unlatch and a new number selection can be made.

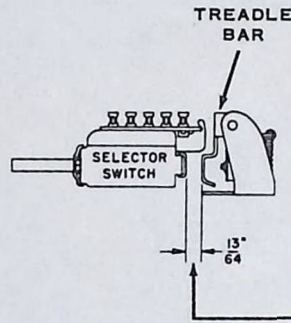
The coin lockout switch, "Q" contact, is normally open; however, when actuated by the pricing treadle bar, it closes to complete a circuit to the Coin Lockout Solenoid in the phonograph coin chute. Terminal Board TB362, located on the right side of the electrical selector chassis, serves as a connection to the Coin Lockout Solenoid. The Coin Lockout Solenoid in the phonograph is energized and coins are locked out during Album Subtract motor operation only.

TREADLE BAR AND SWITCH ADJUSTMENTS



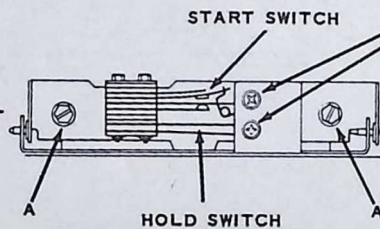
NOTE: All treadle bars should move freely on their pivots to rest against the rubber bumpers and should have a small amount of end play.

With the treadle bar against the rubber bumper in the treadle bar adjusting plate, position the plate (Screws A) so there is $13/64$ inch (.203 inch) separation between the treadle bar and the frame of the selector switch. Use the shank of a No. 6 (.204 inch) or No. 7 (.201 inch) or a $13/64$ inch twist drill for a spacing gage.



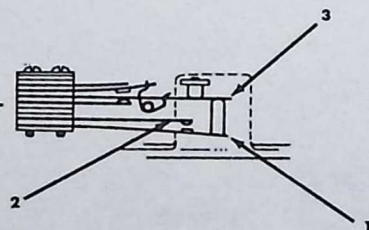
The timing of operation of the snap action Start Switches is adjusted by positioning the brackets for the entire switch assembly. **DO NOT ADJUST BY BENDING THE SNAP ACTION SWITCH BLADES.**

Loosen the bracket holding screws B, and position the switches so the Start Switch contacts close when the selector switches have approximately $1/32$ inch more travel before latching by latch bars.



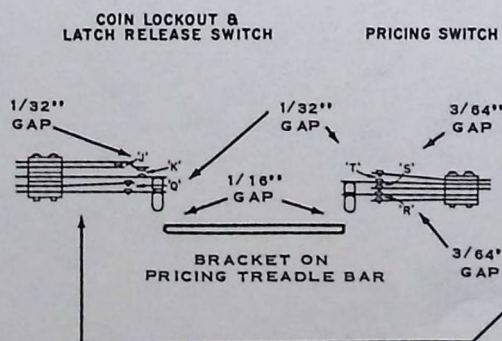
With all selector switches released:

- (C) Adjust Blade No. 1 so its fibre lift bears against Blade No. 3 approximately 2 oz. (50 grams).
- (D) Adjust Blade No. 2 for $1/64$ inch to $1/32$ inch contact gap.
- (E) Readjust force of Blade No. 1 against Blade No. 3 so Blade No. 2 moves approximately blade thickness ($1/64$ inch) when contacts close.
- (F) Check operation: Hold Switch must close before Start Switch closes and open after Start Switch opens.



Pricing, Coin Lockout & Latch Release Switch Adjustments

With no selector switches operated, set up gaps as shown.



(A) With a Pricing Tab set for "Album Play", operate selector switch, note that "R" contact opens before Start Switch closes. "S" contact opens after "R" contact opens. "T" contact, normally open with $1/32$ " minimum gap, to close before Start Switch closes.

(B) "Q" contact is normally open. **NOTE:** Switching of all contacts to take place before number Start Switch closes.

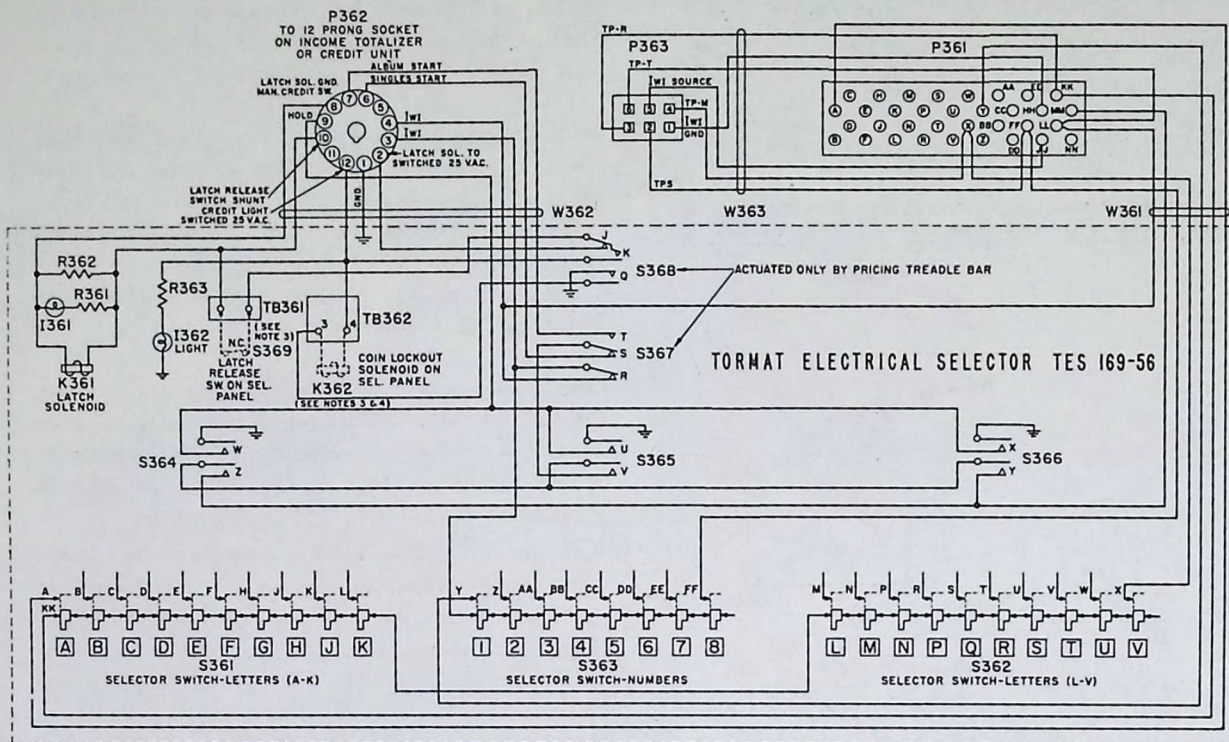
(C) Contact pressure as follows:

"J", "K" and "Q" - 1 ounce.

"R", "S" and "T" - $1\frac{1}{2}$ ounces.

TORMAT ELECTRICAL SELECTOR, Type TES169-56

DRAWING NO. 411549



NOTES:

1. ALL PLUG AND SOCKET CONNECTIONS SHOWN ARE AS VIEWED FROM CABLE SIDE.
2. ALL SWITCHES ARE SHOWN IN NORMAL (NON-OPERATED) POSITION.
3. S369 & K362 ARE PHYSICALLY PARTS OF THE OVERALL CABINET ASSEMBLY AND ARE ELECTRICALLY CONNECTED TO PINS ON TB361 & TB362 BY MEANS OF SEPARABLE CONNECTORS.
4. ON 50 CYCLE PHONOGRAPHS K362 IS PART NO. 487470.

Schematic Diagram for Tormat Electrical Selector, Type TES169-56. (Code B)

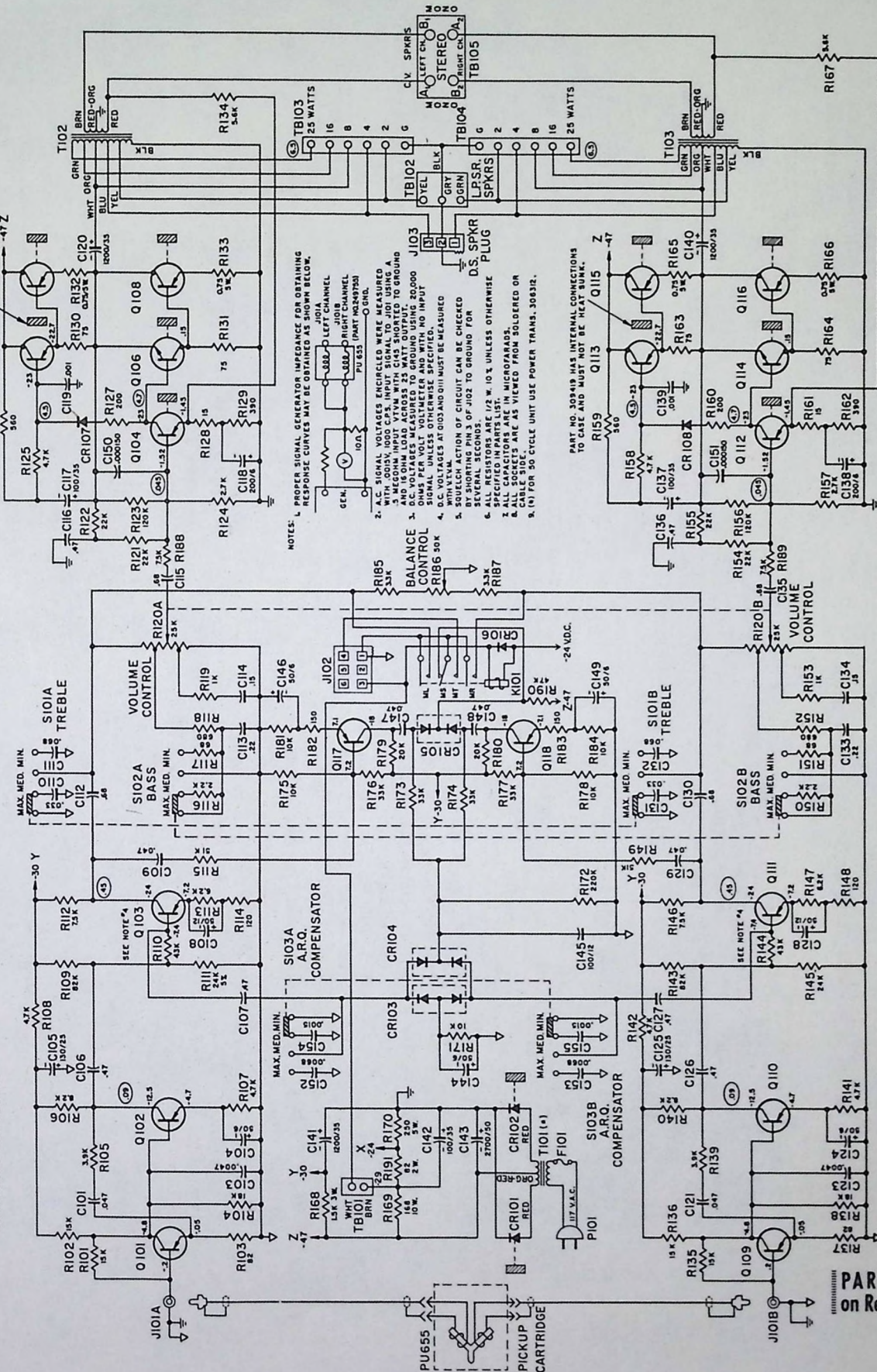
Item	Part No.	Description	Item	Part No.	Description
-	411042	Tormat Elec. Selector, Type TES169 -56	S361	411507	Selector Switch (A - K)
I361	411540	Credit Light Socket & Cable Assembly	S362	411509	Selector Switch (L - V)
I362	505173	Panel Lamp No. 55	S363	411511	Selector Switch (Number)
K361	410726	Latch Solenoid	S364	411073	Snap Switch
K362	487416	Coin Lockout Magnet Assembly (See Note 4)	S365	411073	Snap Switch
P361	411557	Female Block	S366	411073	Snap Switch
P362	410708	Plug, 12 Prong	S367	411525	Pricing Switch
P363	411556	6-Contact Socket	S368	411597	Coin Lockout & Latch Release Switch
R361	81178	Resistor 65 Ohm., 10 W.	S369	487159	Miniature Snap Switch
R362	81183	Resistor 100 Ohm., 10 W.	TB361	411537	Terminal Board Assembly
R363	81178	Resistor 65 Ohm., 10 W.	TB362	411537	Terminal Board Assembly
			W361	411533	Matrix Cable
			W362	411539	Control Cable
			W363	411535	Write-In Cable

TRANSISTORIZED STEREO AMPLIFIER, Type TSA1

LEFT CHANNEL

DRAWING NO. 306340

PART NO. 309419 HAS INTERNAL CONNECTION TO CASE AND MUST NOT BE HEAT SUNK.



NOTES:
1. PROPER SIGNAL GENERATOR IMPEDANCE FOR OBTAINING RESPONSE CURVES MAY BE OBTAINED AS FOLLOWS:
GEN. J101B LEFT CHANNEL
GEN. J101B RIGHT CHANNEL
PU 655 (PART NO. 306340) 0 GND.

2. A.C. SIGNAL VOLTAGES ENGAGED WERE MEASURED WITH .005V, 1000 CPS. INPUT SIGNAL TO J101 USING A 150 OHM LOAD ACROSS 25 WATT OUTPUT USING 30,000 SIGNAL. D.C. VOLTAGES MEASURED WITH NO INPUT SIGNAL. D.C. VOLTAGES AT Q103 AND Q116 MUST BE MEASURED WITH VOLUME.
3. SQUELCH ACTION OF CIRCUIT CAN BE CHECKED SEVERAL SECONDS AFTER J102 TO GROUND FOR A FEW SECONDS.
4. ALL RESISTORS ARE 1/2 W. 10% UNLESS OTHERWISE SPECIFIED IN PARTS LIST.
5. ALL CAPACITORS ARE 50V. UNLESS OTHERWISE SPECIFIED IN PARTS LIST.
6. ALL SOCKETS ARE AS VIEWED FROM SOLDERED OR CABLE SIDE.
7. (1) FOR 50 CYCLE UNIT USE POWER TRANS. 306312.

PART NO. 309419 HAS INTERNAL CONNECTIONS TO CASE AND MUST NOT BE HEAT SUNK.

RIGHT CHANNEL

Schematic Diagram for Transistorized Stereo Amplifier, Type TSA1. (Code D)

PARTS LIST on Reverse Side

TRANSISTORIZED STEREO AMPLIFIER, Type TSA1

Item	Part No.	Description	Item	Part No.	Description	Item	Part No.	Description	Item	Part No.	Description
C101	86327	0.047 Mfd. 50 V. Mylar	C152	86332	0.0068 Mfd. 50 V. Mylar	R109	82447	82000 Ohm 1/2 W. 10%	R157	82670	2700 Ohm 1/2 W. 5%
C103	86330	0.0047 Mfd. 50 V. Mylar	C153			R110	82678	43000 Ohm 1/2 W. 5%	R158	82630	6800 Ohm 1/2 W. 5%
C104	87696	50 Mfd. 6 V. Lytic	C154	86240	0.0015 Mfd. Ceramic	R111	82605	24000 Ohm 1/2 W. 5%	R159	82421	560 Ohm 1/2 W. 10%
C105	87717	130 Mfd. 25 V. Lytic	C155			R112	82631	7500 Ohm 1/2 W. 5%	R160	82686	240 Ohm 1/2 W. 5%
C106	86329	0.47 Mfd. 50 V. Mylar				R113	82610	6200 Ohm 1/2 W. 5%	R161	82402	15 Ohm 1/2 W. 10%
C107						R114	82413	120 Ohm 1/2 W. 10%	R162	82688	390 Ohm 1/2 W. 5%
C108	87703	50 Mfd. 12 V. Lytic	CR101	309387	Silicon Rectifier U-212	R115	82796	51000 Ohm 1/2 W. 5%	R163		75 Ohm 1/2 W. 5%
C109	86327	0.047 Mfd. 50 V. Mylar	CR102			R116	82428	2200 Ohm 1/2 W. 10%	R164		0.75 Ohm 5 W. 10%
C110	86336	0.033 Mfd. 50 V. Mylar	CR103	309398	Dual Selenium Diode	R117	82410	68 Ohm 1/2 W. 10%	R165		5600 Ohm 1/2 W. 10%
C111	86351	0.068 Mfd. 50 V. Mylar	CR104	309397	Dual Selenium Diode	R118	82422	680 Ohm 1/2 W. 10%	R166		1500 Ohm 3 W. 10%
C112	86354	0.68 Mfd. 50 V. Mylar	CR105	309399	Dual Selenium Diode	R119	82424	1000 Ohm 1/2 W. 10%	R167		168 Ohm 10 W. 10%
C113	86331	0.22 Mfd. 50 V. Mylar	CR106			R120A	306318	Volume Control 25,000 Ohm.	R170	81201	250 Ohm 5 W. 10%
C114	86303	0.15 Mfd. 50 V. Mylar	CR107	309384	Semi Conductor Rectifier (Silicon)	R121	82639	22000 Ohm 1/2 W. 5%	R171	82436	10,000 Ohm 1/2 W. 10%
C115	86354	0.68 Mfd. 50 V. Mylar	CR108			R122	82699	120,000 Ohm 1/2 W. 5%	R172	82452	220,000 Ohm 1/2 W. 10%
C116	86329	0.47 Mfd. 50 V. Mylar	F101	306316	8/10 Amp. Slo-Blo	R123	82670	2700 Ohm 1/2 W. 5%	R173	82442	33,000 Ohm 1/2 W. 10%
C117	87700	100 Mfd. 35 V. Lytic				R124	82630	6800 Ohm 1/2 W. 5%	R174		10,000 Ohm 1/2 W. 10%
C118	87702	200 Mfd. 6 V. Lytic	J101A	306306	Input Socket	R125	82630	6800 Ohm 1/2 W. 5%	R175	82436	10,000 Ohm 1/2 W. 10%
C119	86309	0.001 Mfd. Ceramic	J101B			R126	82421	560 Ohm 1/2 W. 10%	R176	82442	33,000 Ohm 1/2 W. 10%
C120	87718	1200 Mfd. 35 V. Lytic	J102	306302	Mute Jack	R127	82686	240 Ohm 1/2 W. 5%	R177		10,000 Ohm 1/2 W. 10%
C121	86327	0.047 Mfd. 50 V. Mylar	J103	803725	D.S. Output Jack	R128	82402	15 Ohm 1/2 W. 10%	R178	82436	10,000 Ohm 1/2 W. 10%
C122	86330	0.0047 Mfd. 50 V. Mylar	K101	306352	Mute Trip Relay	R129	82688	390 Ohm 1/2 W. 5%	R179		20,000 Ohm 1/2 W. 10%
C123	86330	0.0047 Mfd. 50 V. Mylar				R130	82649	75 Ohm 1/2 W. 5%	R180		10,000 Ohm 1/2 W. 10%
C124	87696	50 Mfd. 6 V. Lytic	Q101	309413	GC-112A PNP Low Noise Germ. Transistor	R131		0.75 Ohm 5 W. 10%	R181	82436	10,000 Ohm 1/2 W. 10%
C125	87717	130 Mfd. 25 V. Lytic	Q102	309414	GC-112 PNP Germ. Transistor	R132	81231	82000 Ohm 1/2 W. 10%	R182		150 Ohm 1/2 W. 10%
C126	86329	0.47 Mfd. 50 V. Mylar	Q103	309420	GC-380 PNP High Gain Germ. Transistor	R133		5600 Ohm 1/2 W. 10%	R183		10,000 Ohm 1/2 W. 10%
C127			Q104	309421	RCA 34573 PNP Germ. Transistor	R134	82433	15000 Ohm 1/2 W. 10%	R184	82436	10,000 Ohm 1/2 W. 10%
C128	87703	50 Mfd. 12 V. Lytic	Q105	309419	SC-365 PNP Silicon Transistor	R135	308967	50,000 Ohm Balance Control	R185	82430	3300 Ohm 1/2 W. 10%
C129	86327	0.047 Mfd. 50 V. Mylar	Q106	309418	SC-350 NPN Silicon Transistor	R136		82 Ohm 1/2 W. 10%	R186	306319	50,000 Ohm Balance Control
C130	86354	0.68 Mfd. 50 V. Mylar	Q107			R137	82411	82 Ohm 1/2 W. 10%	R187	82430	3300 Ohm 1/2 W. 10%
C131	86336	0.033 Mfd. 50 V. Mylar	Q108	309412	GC-114 PNP Germ. Power Transistor	R138	82439	18000 Ohm 1/2 W. 10%	R188		7500 Ohm 1/2 W. 5%
C132	86351	0.068 Mfd. 50 V. Mylar	Q109	309413	GC-112A PNP Low Noise Germ. Transistor	R139	82626	3900 Ohm 1/2 W. 5%	R189		47000 Ohm 1/2 W. 10%
C133	86331	0.22 Mfd. 50 V. Mylar	Q110	309414	GC-112 PNP Germ. Transistor	R140	308968	8200 Ohm 1/2 W. 10%	R190	82444	47000 Ohm 1/2 W. 10%
C134	86303	0.15 Mfd. 50 V. Mylar	Q111	309420	GC-380 PNP High Gain Germ. Transistor	R141	82432	4700 Ohm 1/2 W. 10%	R191	81237	82 Ohm 2 W. 10%
C135	86354	0.68 Mfd. 50 V. Mylar	Q112	309421	RCA 34573 PNP Germ. Transistor	R142		82000 Ohm 1/2 W. 10%	S101	306329	Treble Switch
C136	86329	0.47 Mfd. 50 V. Mylar	Q113	309419	SC-365 PNP Silicon Transistor	R143	82447	43000 Ohm 1/2 W. 5%	S102	306329	Bass Switch
C137	87700	100 Mfd. 35 V. Lytic	Q114	309418	SC-350 NPN Silicon Transistor	R144	82678	24000 Ohm 1/2 W. 5%	S103	306329	Auto. Record Quality Compensator
C138	87702	200 Mfd. 6 V. Lytic	Q115	309412	GC-114 PNP Germ. Power Transistor	R145	82605	7500 Ohm 1/2 W. 5%	T101	306312	Power Transformer for 50 cycles
C139	86309	0.001 Mfd. Ceramic	Q116			R146	82631	6200 Ohm 1/2 W. 5%	T102	306311	Power Transformer for 60 cycles
C140	87718	1200 Mfd. 35 V. Lytic	Q117	309414	GC-112 PNP Germ. Transistor	R147	82610	120 Ohm 1/2 W. 10%	T103	306314	Output Transformer
C141			Q118			R148	82413	51000 Ohm 1/2 W. 5%	TB101	306313	Output Transformer
C142	87700	100 Mfd. 35 V. Lytic	R101	308967	15000 Ohm. 1/2 W. 10%	R149	82796	68 Ohm 1/2 W. 10%	TB102	306343	2 Lug Terminal Board
C143	87721	2700 Mfd. 50 V. Lytic	R102			R150	82428	1000 Ohm 1/2 W. 10%	TB103	306303	3 Lug Terminal Connector
C144	87696	50 Mfd. 6 V. Lytic	R103	82411	82 Ohm 1/2 W. 10%	R151	82410	68 Ohm 1/2 W. 10%	TB104	306304	6 Lug Terminal Board
C145	87724	100 Mfd. 12 V. Lytic	R104	82439	18000 Ohm 1/2 W. 10%	R152	82422	680 Ohm 1/2 W. 10%	TB105	306338	4 Lug Terminal Board
C146	87696	50 Mfd. 6 V. Lytic	R105	82626	3900 Ohm 1/2 W. 5%	R153	82424	1000 Ohm 1/2 W. 10%			
C147	86327	0.047 Mfd. 50 V. Mylar	R106	308968	8200 Ohm 1/2 W. 10%	R154	82639	22000 Ohm 1/2 W. 5%			
C148			R107	82432	4700 Ohm 1/2 W. 10%	R155		120,000 Ohm 1/2 W. 5%			
C149	87696	50 Mfd. 6 V. Lytic	R108	82432	4700 Ohm 1/2 W. 10%	R156	82899				
C150											
C151	86243	0.000150 Mfd. Ceramic									

SEEBURG

TWIN STEREOPHONIC SPEAKERS, Type TW1-8 and TC1-8

SPECIFICATIONS

Size 8 inch
 Type Constant Voltage
 Power Rating 16 watts (each)
 (Taps at 16, 8, 4 and 1 watts)
 Net Weight 17 Pounds (2 speakers)
 Shipping Weight 22 Pounds (2 speakers)

The Seeburg Twin Stereophonic Speakers are specifically designed to be used in pairs. The TW1-8 speaker illustrated above is intended for wall installation. The TC1-8 is for corner mounting. The wall type TW1-8 may be converted for corner mounting with the Type "CA1" Corner Adapter.

INSTALLATION

Locate the speaker mounting holes as shown in Figure 2. Use a plumb line or level to insure vertical alignment. Allow a minimum of 2" beyond the 1-7/8" dimension to provide ceiling clearance. Screw in the No. 8 wood screws (provided) allowing about 1/2 inch clearance between the heads and the wall. Place the cabinet into position and, allowing the screw heads to enter the slots in the back, move the cabinet downward until the screw shanks are wedged in the slots.

Connection to the speaker is made at the terminal board located at the top of the cabinet. The CV line output terminals of the amplifier are connected by means of suitable speaker cable. To select the desired power output, move the SPEAKER WATTS link to the proper terminal. Refer to the Stereo Phonograph Installation Manual for placement and connections of complete speaker system.

PARTS LIST

PART NO.	PART NAME
502832	SPEAKER HOUSING
502848	TRANSFORMER (T101)
502850	TERMINAL PANEL (E101)
87671	CONDENSER (C101)
502842	8 INCH SPEAKER
502851	SPEAKER HOUSING BACK ASSEMBLY (TW1-8 ONLY)
502872	SIDE RAIL (TR1-8 ONLY)
502874	END PLATE ASSEMBLY (TR1-8 ONLY)
502877	CHANNEL (TR1-8 ONLY)
502726	MOUNTING BRACKET (TR1-8 ONLY)
502855	MOUNTING SCREW KIT (TR1-8 ONLY)

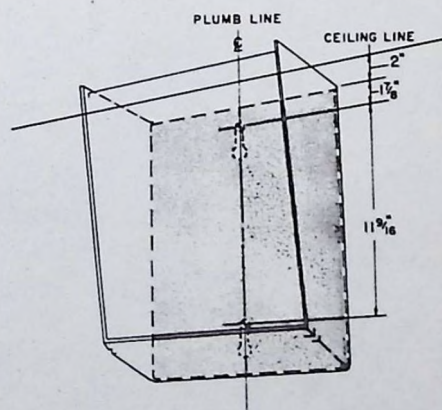
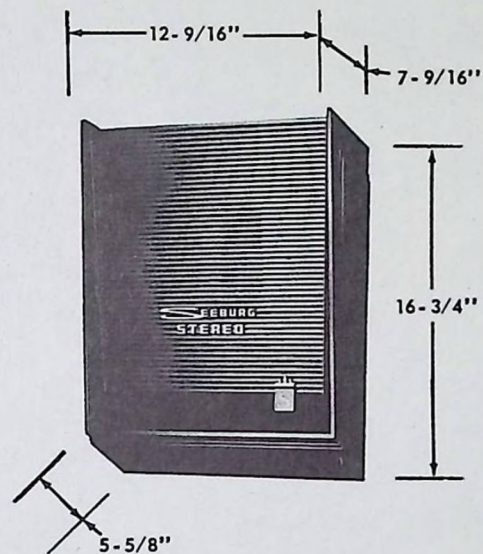
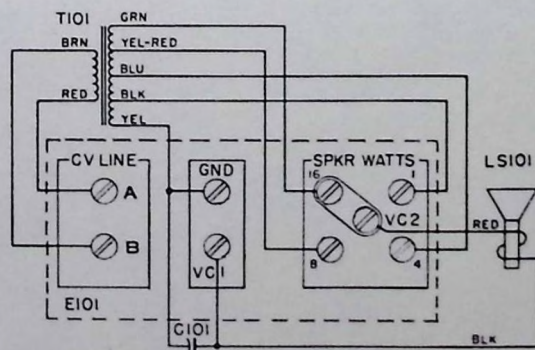


Figure 2. Speaker Mounting.



SEEBURG

TWIN STEREO RECESSED SPEAKER, TYPE TR1-8

SPECIFICATIONS

Size 8 inch
Type Constant Voltage
Power Rating 16 watts (each)
(Taps at 16, 8, 4 and 1 watt)
Net Weight 10 pounds (2 speakers)
Shipping Weight 13 pounds (2 speakers)

The Type TR1-8 speakers are specifically designed to be used in pairs for recessed wall and ceiling installations.

INSTALLATION

The speakers may be installed directly in a wall or ceiling as follows:

1. THE MINIMUM DEPTH REQUIRED FOR RECESSING THIS SPEAKER IS $4\frac{1}{2}$ INCHES FROM THE SURFACE OF THE WALL OR CEILING. However, sufficient additional clearance should be available to prevent any interference. Locate the exact position in which the speaker is to be mounted. Make certain no stud will interfere with mounting of the speaker by tapping the surface or drilling a series of very fine holes.
2. Scribe an $8\frac{1}{4}$ inch diameter circle.
3. Cut out with a compass saw.
4. The speaker, with its attached grille, is now ready to be fastened in place after wiring.
5. The volume of the space in back of the speaker should be as large as possible. The back of the speaker should not be enclosed or "boxed" in. For optimum performance, the minimum air space in back of the speaker should not be less than 6 cubic feet.

Use Mounting Rings, Part Number 502931, available from your Seeburg Distributor, when installing the speakers in a plaster or composition wall or ceiling.

1. Follow the instructions outlined in previous step 1.
2. Mark midpoints on the ring. They must coincide with a plumb line (*Figure 3a*) to insure vertical alignment of the installed wall speaker. A similar center-line mark should be used for orientation in ceiling

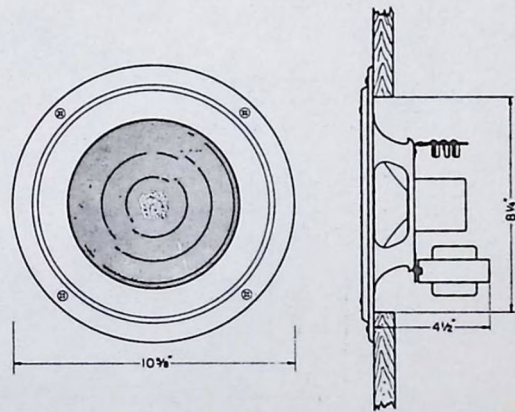
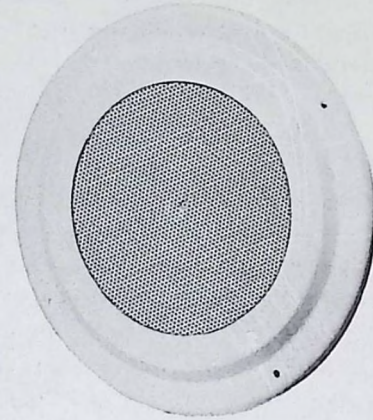


Figure 2.

installations.

3. Scribe a 9-inch diameter circle about the center mark and cut out the wall or ceiling along the circle.
4. Fasten the mounting ring as shown in *Figure 3b*.
5. The speaker, with its attached grille, is now fastened in place (*Figure 3c*) after wiring.

Installations of speakers in new construction require the use of Plaster Rings, Part Number 502932, available from your Seeburg Distributor.

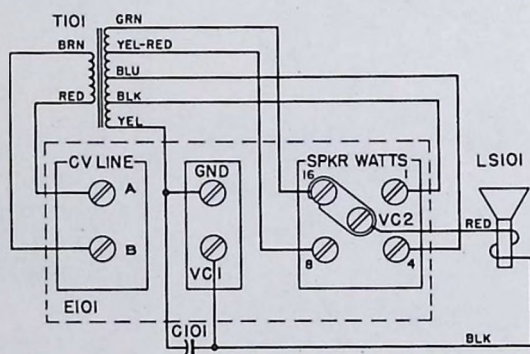
1. Apply previous step 1.
2. Nail 2 by 2's in place and install Plaster Ring as shown in *Figure 4* after lath has been applied.

3. After plastering is completed, install the speaker (Figure 5).

The speaker and grille assembly can be removed for adjustment or service without disturbing the Mounting Ring or Plaster Ring. All that is necessary is the removal of four screws on the outer edge of the speaker grill.

SPEAKER WIRING

Connection to the speaker is made at the terminal board located at the top of the cabinet. The CV line output terminals of the amplifier are connected by means of suitable speaker cable. To select the desired power output move the SPEAKER WATTS link to the proper terminal. Refer to the Stereo Phonograph Installation Manual for placement and connections of complete speaker system.



PARTS LIST

Part No.	Part Name
512371	Speaker Grille Assembly
502842	Speaker
502848	Transformer (T101)
502919	Terminal Panel (E101)
87671	Condenser (C101)

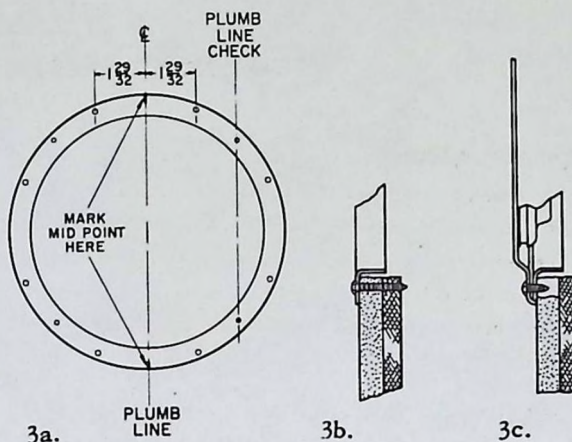


Figure 3.

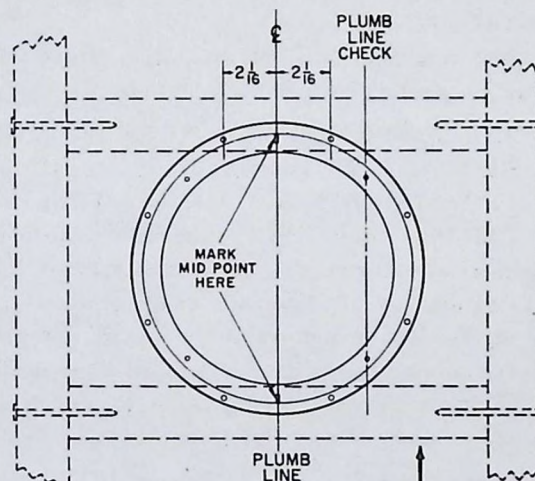


Figure 4.

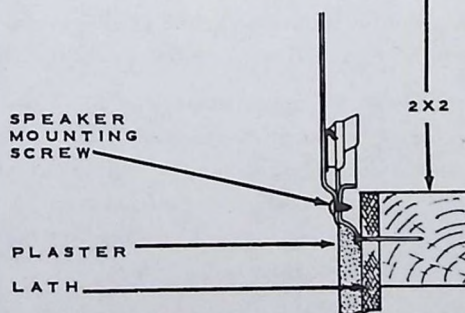


Figure 5.

SEEBURG

EXTENDED BASS WALL OR CORNER SPEAKER, Type EBWC2-12

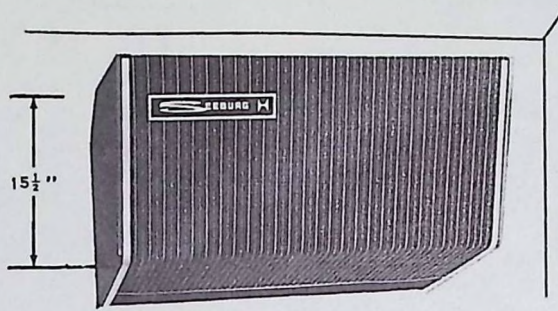


Figure 1. Wall Mounting.

SPECIFICATIONS

Size 2-way - 8 inch and 12 inch
 Type Constant Voltage
 Power Rating 16 watts (each)
 (Taps at 16, 8, 4 and 1 watt).
 Net Weight 48 pounds (2 speakers)
 Shipping Weight 56 pounds (2 speakers)

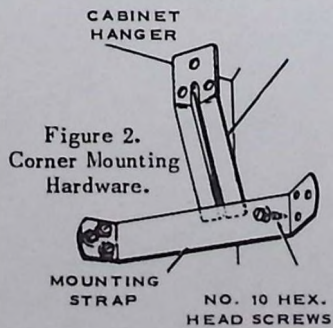
The Seeburg Extended Bass Wall or Corner Speakers are specifically designed two-way speaker systems to be used in pairs for wall or corner installations. They provide the optimum in full range response for stereo speaker installations remote from the stereo phonograph.

INSTALLATION:

Refer to the Stereo Phonograph Installation Manual for "Room Width to Height Above Floor" relationship to determine position of the speakers.

Corner Mounting

Corner mounting is possible by means of a cabinet hanger and mounting strap as shown in Figure 2. Pre-drilled holes at the rear of the speaker cabinet position the hanger which is secured in place using the No. 10 (3/4 inch) screws supplied.



Attach the mounting strap to the walls with the No. 10 (2 inch) self tapping screws supplied. A minimum of 9 inches should be provided between the ceiling and the top of the mounting strap to insure sufficient clearance for the cabinet hanger.

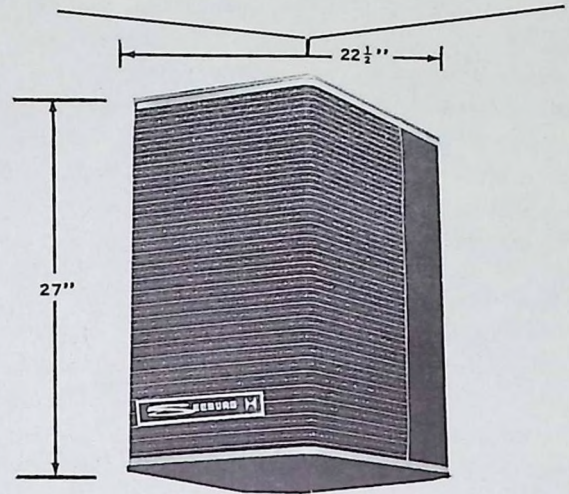


Figure 3. Corner Mounting.

The "Seeburg Stereo" ornament may be oriented as required by rotating.

Wall Mounting

Locate the speaker mounting holes as shown in Figure 4. Use a level to insure horizontal installation. Allow a minimum of 9 inches between the level line and the ceiling to provide mounting clearance. Screw in the No. 10 (2 inch) self tapping screws allowing about 1/2 inch clearance between the heads and the wall. Place the cabinet in position and, allowing the screw heads to enter the slots in the back, move the cabinet downward until the screw shanks are wedged in the slots.

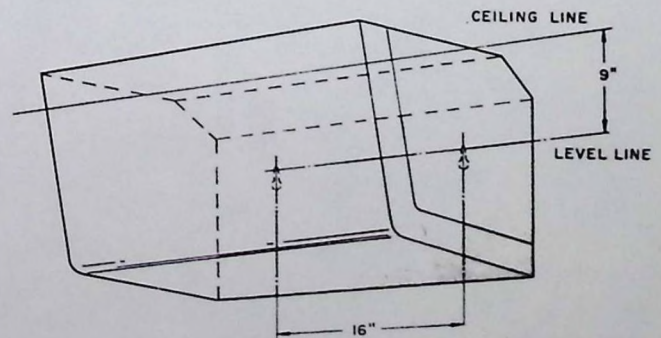


Figure 4. Wall Mounting.

SPEAKER WIRING

Connection to the speaker is made at the terminal board located at the rear of the cabinet. The CV line output terminals of the amplifier are connected by means of suitable speaker cable. To select the desired power output, move the SPEAKER WATTS link to the proper terminal. Refer to the Seeburg Stereo Phonograph Installation Manual for placement and connection of the complete speaker system.

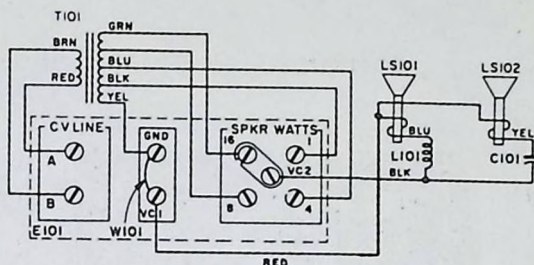


Figure 5. Schematic Diagram for Type EBWC2-12.

PARTS LIST

Part No.	Description
512262	Mounting Hardware Kit
512381	Cabinet
512385	Seeburg Stereo Ornament
903210	Timmerman Nut
502976	Terminal Panel (E101)
512260	12 Inch Speaker (LS101)
502848	C.V. Transformer (T101)
10020XXX-001200	Jumper (W101)
512277	Coil (L101)
87712	Condenser (C101)
484390	8-Inch Speaker (LS102)
512278	Speaker Cable

SEEBURG

STEREO CONSOLETTA, Type SC1

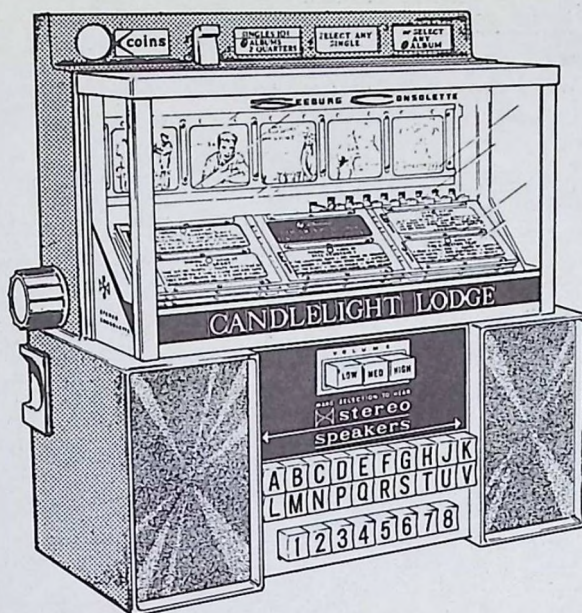


Figure 1. Exterior View.

The Seeburg Stereo Console, Type SC1, is a unit of the Seeburg wired remote control system designed for the remote choice of "Album" or "Single" play selections in the Select-O-Matic phonograph. The Console is equipped with a pair of speakers — Right Channel and Left Channel — which provide for localized listening to selections. Speaker volume may be controlled at the Console by push buttons marked LOW, MEDIUM and HIGH. When a selection is made at the Console, circuits are completed through the phonograph which permit listening to the program through the Console stereo speakers. The speakers continue operation until the phonograph mechanism comes to rest and are then silent until a selection is again made at the Console.

The Console operates in conjunction with the selection and audio systems in the LPC model phonograph. The Console is connected to the phonograph with a 10-conductor color-coded cable.

The pricing structure of the Stereo Console, Type SC1, is initially set up at the factory: one album for 2 quarters, three single plays for one quarter, or one play for a dime or two nickels.

The Console is equipped with a Type APU10-56, Album Pricing Unit, which provides extreme flexibility in setting up different pricing combinations as detailed on pages 6 & 7. The slug rejector is designed to accept quarters, dimes and nickels. Each coin operates a coin switch to establish credit for the selection of a play at the Console. At the same time, the credit unit in the Console transmits the total credits accepted to the Type IT1R-56, Income Totalizer in the phonograph which indicates total cash deposited.

When the phonograph main switch is turned on, credit lights in the Console go on immediately after minimum credit has been established, i.e., two nickels or a dime have been deposited. The credit lights stay on as long as there remain unspent credits.

The Console mechanism operates at 24 volts A.C., 60 cycles. Power is supplied by the RCSU4, Remote Control Stepper Unit, for up to 6 Stereo Consoles. If the installation requires more than 6 Consoles, an Auxiliary Power Supply, Type RPS6-56, must be used for each additional group of 6 Consoles.

The black and white wires of the interconnecting cable carry power to the lights and motor. The blue and black wires comprise a selection circuit to provide remote control of the selection system operation in the phonograph. The brown, red, and orange wires are for transmittal of coin deposit information to the income totalizer in the phonograph and their terminal board is covered and sealed as shown in Figure 2. The balance of wires in the cable are for audio and control of the stereo speakers in the Console.

Bar Bracket Assembly, Seeburg Part No. 500225, is available for rigidly mounting the Console on bars, counters and tables.

The Stereo Console has been thoroughly tested before leaving the factory. Unless damaged in shipment, no adjustments to the Console are necessary.

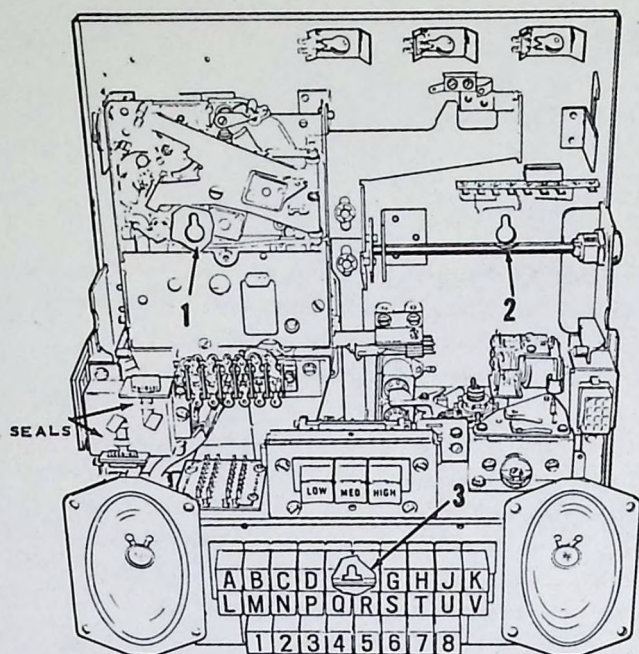


Figure 2. Interior View - Mounting and Seals.

STEREO CONSOLETTETTE INSTALLATION

Mounting the Consolette

There are three holes in the back plate for mounting, identified 1, 2 and 3 in Figure 2. The two upper holes are slotted for fitting over screws already set in the wall at the proper points. The lower hole is for rigidly mounting the Consolette by means of a screw, after it has been hung in place.

If the mounting place on the wall is uneven, the Consolette mounting plate should be shimmed with cardboard or wood before tightening the three mounting screws. Tightening the mounting screws on an uneven wall will bend the mounting plate, which may seriously affect the operation of the Consolette and may cause the cover and lock to bind.

To gain access to the mounting holes in the Consolette's back plate, proceed as follows:

1. Unlock the Consolette and slide off the housing.
2. Remove the program holder by raising the two latches at the top of the program holder and lifting it up and out of the Consolette.
3. Remove the slug rejector by lifting it up and out.

Wiring the Consolette

Use 10-conductor interconnecting cable, Seeburg Part No. 507503, to connect the Consolette to the phonograph. This cable can be purchased in bulk and cut to the correct length for each installation. It is recommended that the

left hand speaker be disconnected and removed from the Consolette to prevent damage to the speaker during wiring. To wire the Consolette, proceed as follows: (See Figures 3 and 4)

1. Remove the cash box. Disconnect and remove left speaker. Remove the bottom hole cover and the cable channel. Remove the terminal board cover from the left hand terminal board.

NOTE: Later models have the above underlined items packaged in plastic bag inside of cash box. (See Page 12125 for Installation.)

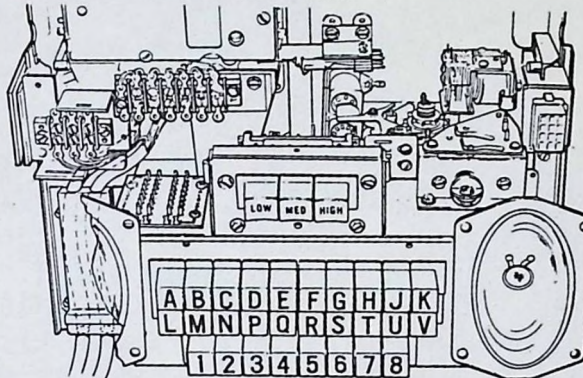


Figure 3. Terminal Boards - Wiring Connections.

2. Feed the interconnecting cable, Seeburg Part No. 507503, through the bottom hole cover and solder on spade lugs, Part No. 940592. Feed the brown, red and orange leads to the lower terminals on the left hand terminal board and carefully dress leads through slot in the mounting bracket so that leads will not be shorted when terminal board cover is installed.

CAUTION: Push spade lugs all the way on to screw to insure clearance when cover is installed.

Connect each lead to the color coded terminal that matches the color of the lead.

3. Feed the black, white, grey, violet, blue, green and yellow leads behind the right hand terminal board and up around the board to the top terminals. Limit wire dressing slack to avoid interference with the bottom of slug rejector to insure proper operation. Connect each lead to the color coded terminal that matches the color of the lead.

CAUTION: Color code matching must be strictly observed.

4. Replace the cover on the left hand terminal board; secure with two screws. Install one of the seals from the lower left side of the terminal board cover so that the serial number is right reading and fold the tab down at the score mark. Install the other seal from the upper right side of the terminal board cover and fold the tab up at the score mark. (See Figure 2).

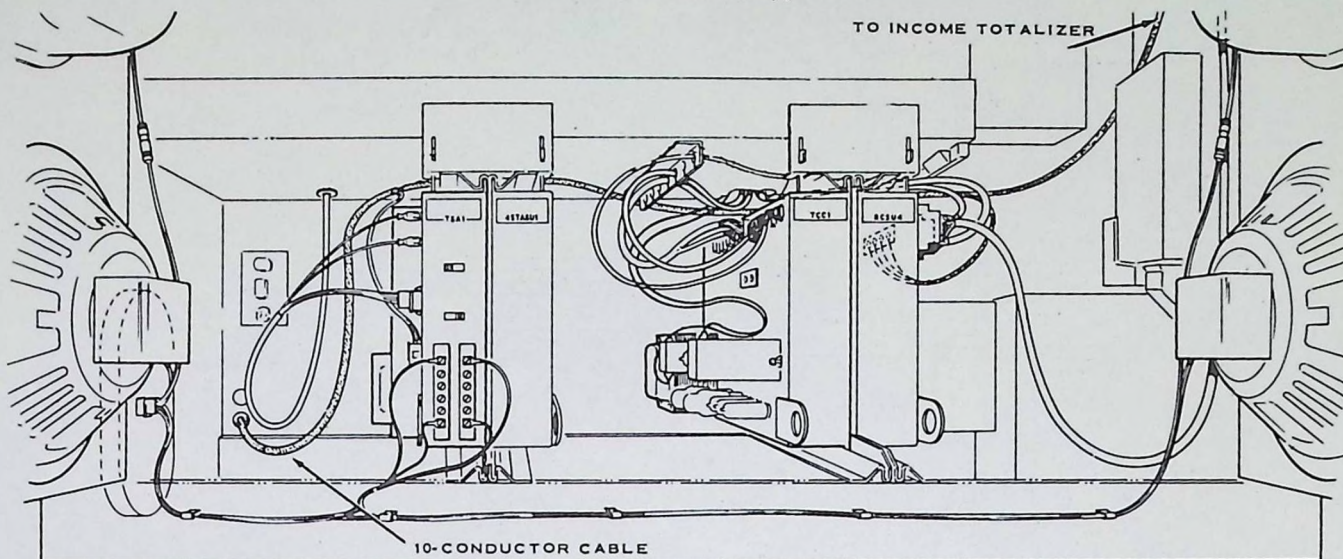


Figure 4. Phonograph Wiring Diagram – Cable Installation in Phonograph.

5. Install the cable channel over the cable and secure it with the top two screws. Position the bottom hole cover and secure both the bottom hole cover and the cable channel with the two lower screws.
6. Position the left hand speaker; secure with two screws from above the mounting bracket. Reconnect the left hand speaker by pushing-on its taper tabs. Note that tabs are different in size and must match connector on speaker to insure proper phasing.
7. Install the cash box, slug rejector and program holder.

Phonograph Wiring

Feed the 10-conductor cable through the hole (located in the lower left hand corner when facing the phonograph). Remove the Masonite plate covering the hole and feed the cable through the grommet. Dress the cable in the phonograph as shown in Figure 4.

Referring to system wiring diagram, Figure 6, connect the violet, blue, white and black leads of the 10-conductor cable to the matching color coded terminals on the terminal board in the Remote Control Stepper Unit, Type RCSU4. Solder one spade lug, Seeburg Part No. 940592 to each of these leads. Be sure the colors of the leads match the colors called for on the terminal board.

Connect the yellow, grey and green leads to the terminal block on the Transistorized Stereo Amplifier, Type TSA1. Strip the end of each lead,

slip it in the proper color coded hole and tighten the terminal screw to secure the lead as shown in Figures 5a and 5b.

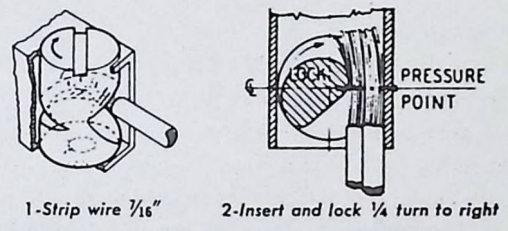


Figure 5a. Stripping and Locking Wire.

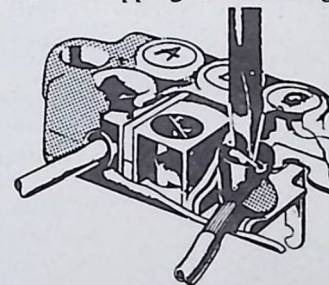


Figure 5b. Perspective Showing Application.

Connect the brown, red and orange leads to the terminal strip on the Income Totalizer, Type IT1R-56. Solder one spade lug, Part No. 940592, to each of these leads and connect them to the proper color coded terminals.

NOTE: The phonograph is capable of supplying power for six Stereo Consolettes. If the installation requires more than six Consolettes, an Auxiliary Power Supply, Type No. RPS6-56, must be added to the Remote Control Stepper Unit for each additional six Consolettes. Connect the remaining leads from these Consolettes in the same way as the first six Consolettes.

STEREO CONSOLETTTE, Type SC1

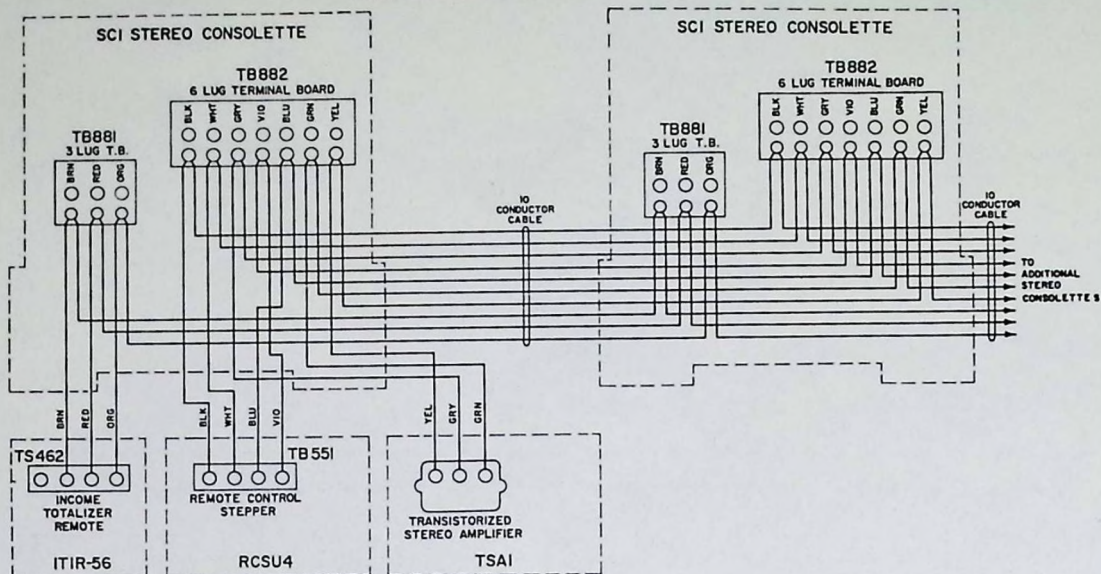


Figure 6. System Wiring Diagram.

Phonograph Wiring

(Used on LPC1R Model Phonographs above Serial No. 112980 (approximately))

On later model phonographs, a 10-Station Cam Action Terminal Block is used for connecting the 10-conductor cable to the phonograph as shown in Figure 7. Internal cabling from the Terminal Block to the various electronic components in the phonograph is factory installed.

Stripping and locking of 10-conductor cable wire is the same as illustrated in Figures 5a and 5b. A system wiring diagram using the 10-Station Cam Action Terminal Block is shown in Figure 8.

NOTE: For application of Cover Seal, refer to section titled "Stereo Consolette Installation"; Page 12118, step 4.

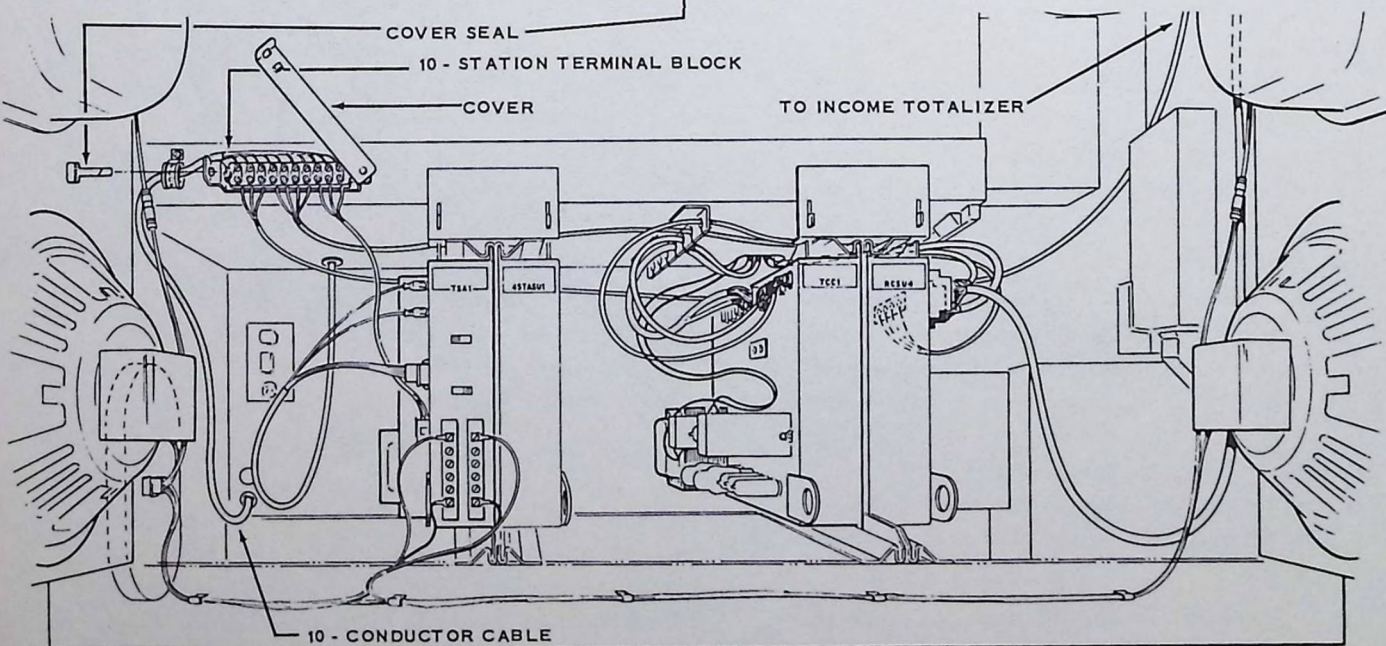


Figure 7. Phonograph Wiring Diagram - Cable Installation in Phonograph.

STEREO CONSOLETTTE, Type SC1

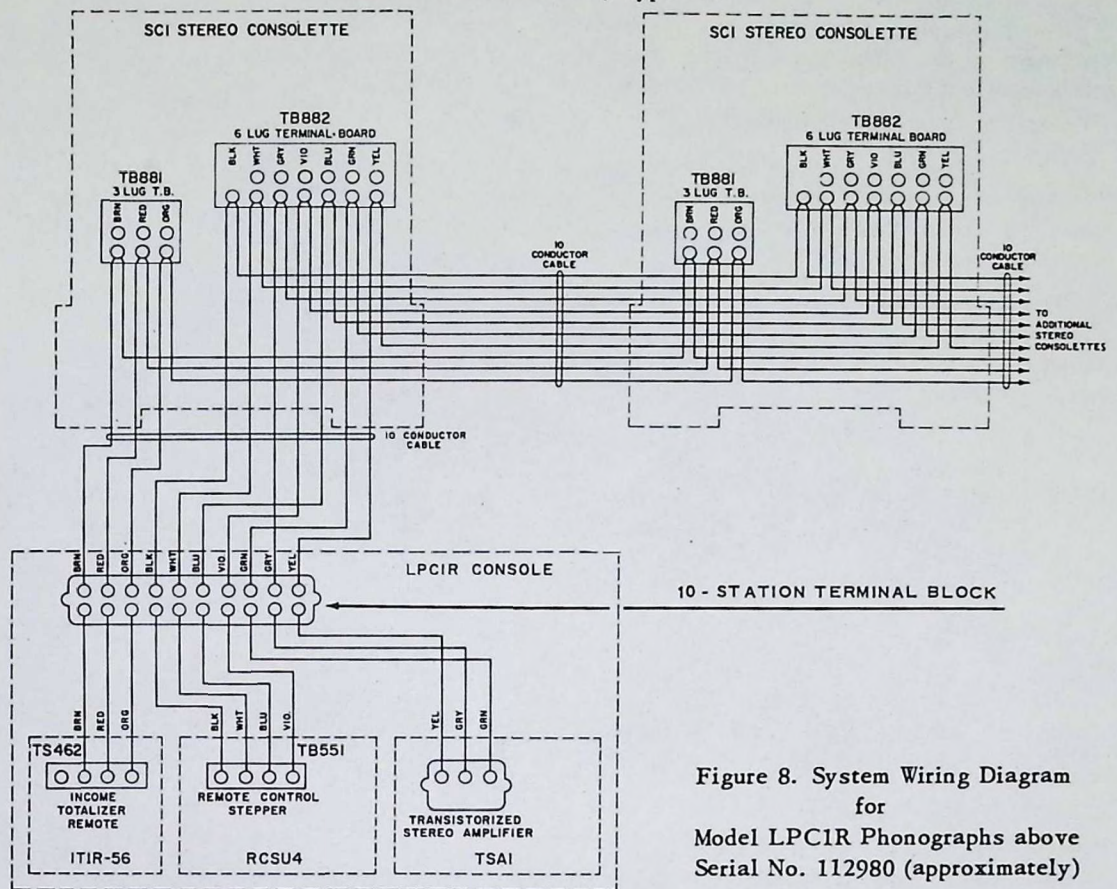


Figure 8. System Wiring Diagram
for
Model LPC1R Phonographs above
Serial No. 112980 (approximately)

PROGRAM HOLDER INSTALLATION

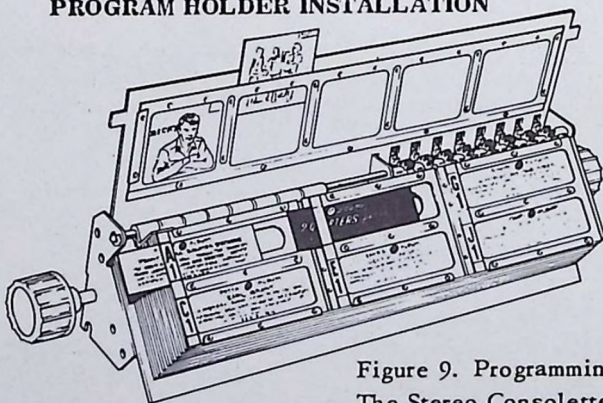


Figure 9. Programming
The Stereo Consolette.

Lithographed LP miniature facsimiles of the album record jacket are supplied for the Consolette in the Albums of the Month Record Package. Unlatch and remove the program holder from Consolette. Slide five album facsimiles in the upper plate of the program holder from the top. Slide five album facsimiles in the lower plate of the program holder from the bottom.

Slide five title strips in each side of the eight program leaves, slide each strip in from the left side of the program leaf. Be sure the "letter-number" codes on each title in the Consolette

match the "letter-number" code for that title in the phonograph. Slide the album pricing card or single pricing card in the upper center slot on every program leaf, Figure 9.

Install the program holder in the Consolette and secure firmly with two latches.

PERSONALIZED LOCATION DISPLAY INSTALLATION

The Stereo Consolette features a display panel which may be used to identify the location. The display holder is secured inside the housing by two spring clips which hold it against the glass. Lift the display holder upward to remove. Hold spring clips open if necessary (see Figure 10).

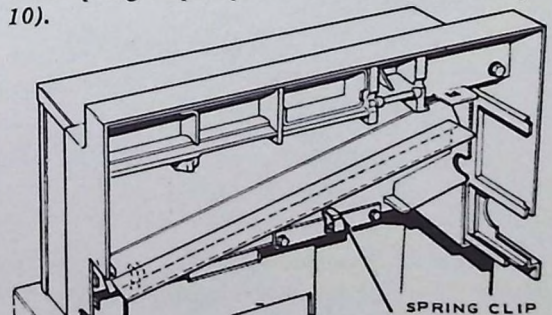


Figure 10. Removing Display Holder.

STEREO CONSOLETTTE, Type SC1

Letters, numbers and spacers, etc. required to make up the sign are available from your Seeburg distributor under Part No. 509088, Type RACK-1, Remote Alphabet Case Kit.

Slide letters into position, making certain that all characters are close together, on the same plane and that the completed display is centered (see Figure 11).

When the display holder is loaded, press it into the spring clips inside the housing. Install the housing on the Consolette and secure with lock.

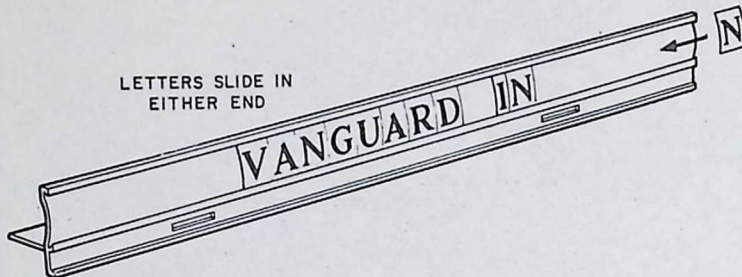


Figure 11. Letter Installation.

PROGRAMMING THE STEREO CONSOLETTTE

When the Consolette is shipped, the pricing mechanism is permanently wired for "Albums" in group 1 and 2. "Singles" are set up in groups 3 through 8. Albums are priced to play for 2 quarters. Single records are priced to play for ten cents or three for a quarter.

In order to change the album grouping or to provide additional groups of albums, shift the two (2) leads which correspond to the particular group to be changed, from the "Singles" terminals to the "Albums" terminals, or vice versa to change from "Albums" to "Singles" grouping as shown in Figure 12. It is recommended that "Albums" grouping changes be made in numerical order. Number Strip Cards in the program holder should be changed at the time when "Album" grouping is changed. The cards are available from your Seeburg Distributor and are listed below.

PART NO.	ALBUM GROUPING
507701	NUMBER STRIP CARD A3
507702	NUMBER STRIP CARD A4
507703	NUMBER STRIP CARD A5
507704	NUMBER STRIP CARD A6
507705	NUMBER STRIP CARD A7
507706	NUMBER STRIP CARD A8

When pricing combinations are to be modified, change the Pricing Window in the top of the Consolette housing and change the Pricing Cards in the program holders.

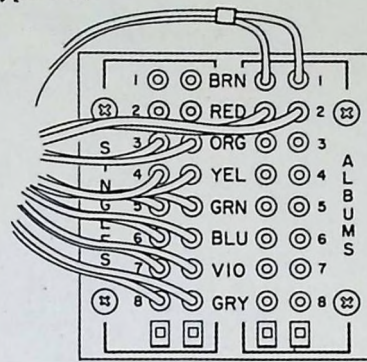


Figure 12. Pricing Terminal Board.

Number	PRICING WINDOW PART NUMBER	SINGLE PRICING CARD PART NUMBER	ALBUM PRICING CARD PART NUMBER
1	*507457	*507508	*507506
2	507660	507508	507686
3	507457	507683	507506
4	507660	507683	507686
5	507661	507684	507686
6	507457	507685	507506
7	507660	507685	507686

* SUPPLIED WITH STEREO CONSOLETTTE.

Figure 13. Pricing Windows and Cards.

The table, Figure 13, lists pricing windows and pricing cards which correspond to pricing windows for seven (7) different pricing combinations numbered (1) through (7) and listed in Figure 18, Album Pricing Unit Adjustment Chart. Items identified by an asterisk are supplied with the Consolette. All others are available from your Seeburg distributor.

For complete Album Programming of the Stereo Consolette, refer to Album Programming Instruction Sheet, Part No. 507715. It further illustrates and details requirements involving the adjustments of the APU10 and associated application of pricing cards and windows.

Refer to the phonograph instruction manual for the procedure for making corresponding pricing changes in the phonograph. Be sure the phonograph and each Consolette are set to play the same selection with the choice of the same "letter-number" group.

Pricing Window Kit (Quarter Only), Part No. 509150, makes it possible to set up the slug rejector for quarter play only. Nickels and dimes deposited are automatically returned. A new Pricing Window and "Singles" Pricing Card is included.

STEREO CONSOLETTTE, Type SC1

PRICING CHANGE ADJUSTMENTS

The Album Pricing Unit, Type APU10-56 is designed for use in the Stereo Consolette. It exemplifies high versatility in credit units and is capable of extreme flexibility in setting up pricing combinations and Album Programming. A chart, *Figure 18*, condenses information regarding the setup requirements for seven (7) popular pricing combinations.

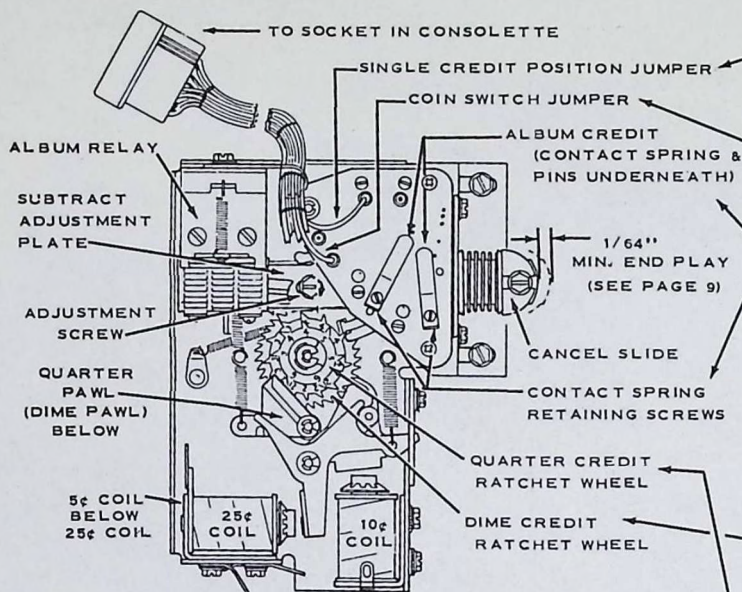


Figure 14. Album Pricing Unit, APU10-56

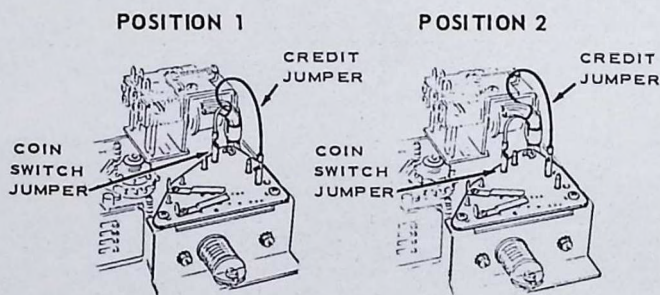


Figure 15. Coin Switch and Credit Jumpers.

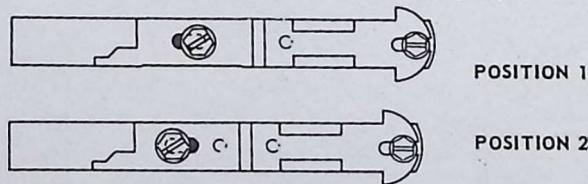


Figure 16. Subtract Plate Positions.

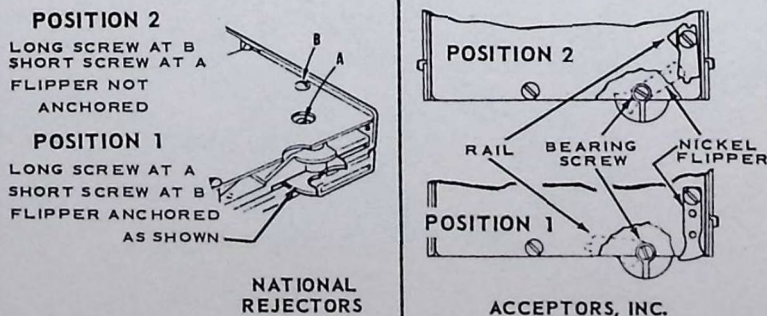


Figure 17. Slug Rejector Adjustment.

Adjusting the Pricing Unit

1. Connect the Single Credit Position Jumper (grey) as required, see *Figure 15*.
2. Connect the Coin Switch Jumper (red-white) as required, see *Figure 15*.
3. Remove the contact spring retaining screws and place the contact pins in their required positions. Replace contact springs and tighten in position.
4. Adjust the Credit Ratchet Wheels to the required settings as follows:
 - a. Turn the ratchet wheel assembly to the maximum clockwise position. This places all three ratchet wheels in zero credit position.
 - b. Lift and turn the 10¢ ratchet wheel (the middle wheel) to the number shown in the Pricing Chart (*Figure 18*). The peak of the tooth on the 10¢ add pawl should be in line with the peak of the first number in the group of credit per coin indicating numbers (when counting clockwise) on the ratchet wheel.
 - c. With the 10¢ ratchet wheel adjusted, lift and turn the 25¢ ratchet wheel to the number shown in the pricing chart. The peak of the tooth on the 25¢ add pawl should be in line with the peak of the first number in the group of credit per coin indicating numbers (when counting clockwise) on the ratchet wheel.

5. To adjust the Subtract Adjustment Plate, first loosen the adjustment screw. The screw can be reached when the Cancel Slide is pushed in. Adjust the plate to Position 1 or Position 2 as required, see *Figure 16*. Tighten screw.

Adjusting the Slug Rejector

Remove the slug rejector from the Consolette and set the flipper to Position 1 or Position 2 as required. See *Figure 17*.

STEREO CONSOLETTTE, Type SC1

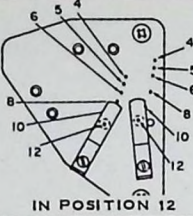
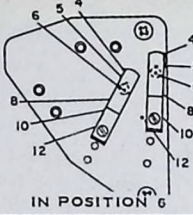
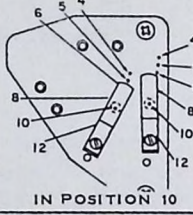
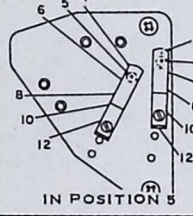
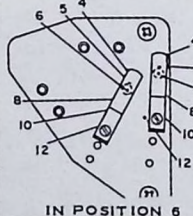
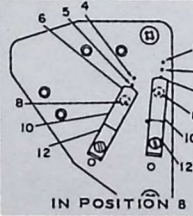
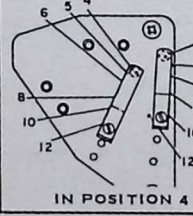
NUMBERS	PRICING WINDOW, SINGLE PRICING & ALBUM PRICING INFORMATION	ALBUM CREDIT CONTACT PIN POSITIONS	CREDIT RATCHET WHEEL POSITIONS		SUBTRACT ADJUSTMENT PLATE POSITION	SINGLE CREDIT JUMPER POSITION	COIN SWITCH JUMPER POSITION	SLUG REJECTOR
			DIMES	QUARTERS				
1	singles 10¢ per selection QUARTER 3 selections albums: 2 QUARTERS	 IN POSITION 12	 POSITION 2	 POSITION 6	POSITION 2	POSITION 2	POSITION 2	POSITION 1
2	singles: 10¢ per selection QUARTER 3 selections albums: 1 QUARTER	 IN POSITION 6	 POSITION 2	 POSITION 6	POSITION 2	POSITION 2	POSITION 2	POSITION 1
3	singles: 10¢ per selection QUARTER 5 selections albums: 2 QUARTERS	 IN POSITION 10	NOT USED	 POSITION 5	POSITION 1	POSITION 1	POSITION 1	POSITION 2
4	singles: 10¢ per selection QUARTER 5 selections albums: 1 QUARTER	 IN POSITION 5	NOT USED	 POSITION 5	POSITION 1	POSITION 1	POSITION 1	POSITION 2
5	singles: 5¢ per selection QUARTER 6 selections albums: 1 QUARTER	 IN POSITION 6	 POSITION 2	 POSITION 6	POSITION 1	POSITION 1	POSITION 2	POSITION 1
6	singles: 10¢ per selection QUARTER 4 selections albums: 2 QUARTERS	 IN POSITION 8	NOT USED	 POSITION 4	POSITION 1	POSITION 1	POSITION 1	POSITION 2
7	singles: 10¢ per selection QUARTER 4 selections albums: 1 QUARTER	 IN POSITION 4	NOT USED	 POSITION 4	POSITION 1	POSITION 1	POSITION 1	POSITION 2

Figure 18. Album Pricing Unit Adjustment Chart.

PHONOGRAPH AUDIO POWER CONSIDERATION

In locations where the Stereo Consolette has been installed close to the phonograph, adjustments should be made at the amplifier to reduce phonograph speaker power. Excessive output from the phonograph speakers will override and negate the sound emanating from the stereo speakers in the Consolette. As low as a 2-

watt phonograph speaker setting may be required, however, the total amplifier load should not be less than 6 watts.

Refer to the LPC Installation Manual, Part No. 487390 for typical system installation using Stereo Consolettes. Note that total amplifier loading must not exceed 25 watts per channel.

INSTALLATION OF TERMINAL BOARD COVER, CABLE CHANNEL & BOTTOM HOLE COVER

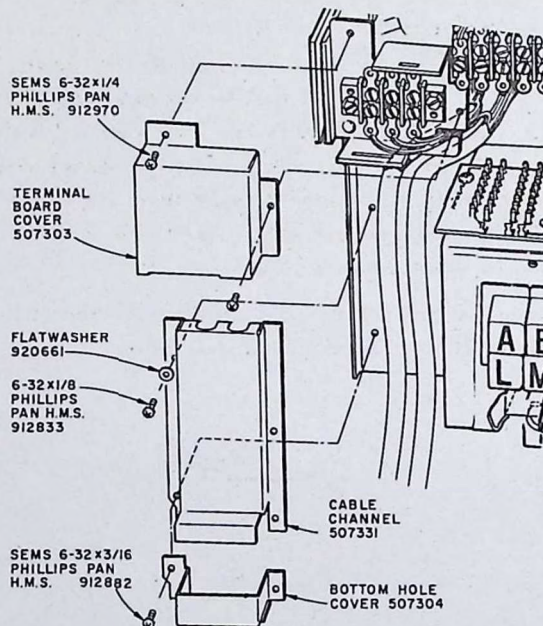


Figure 19.

The above illustration shows the placement and installation of the Terminal Board Cover, Cable Channel and Bottom Hole Cover as required in the Stereo Consolette, Type SC1, and detailed in the Manual Section titled "Wiring the Consolette", paragraphs 1 through 5.

REMOVAL & INSTALLATION OF APU10

TO REMOVE APU10

1. Rotate Contact Wiper Arm on Motor Assembly to position shown in Fig. 1.
2. Disconnect the 12 contact plug.
3. Remove mounting screws. (Fig. 4).
4. Pull unit forward until free of locating pins on SC1 backplate, lift on right side turning right side outward while lifting.
CAUTION do not touch Coin Switch!

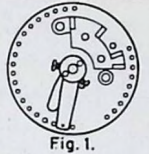


Fig. 1.

TO INSTALL APU10

1. Rotate Contact Wiper Arm to position shown in Fig. 1.
2. Pull Return Lever on Motor Assembly away from SC1 Back Plate. (Fig. 3).
3. Reverse step 4 removal procedure. Be sure Pawl Pin on Cancel Slide is between Return Lever and SC1 Back Plate. (Fig. 3).
4. Start the mounting screws. Make sure to use flatwashers if they were used previously.
5. Rotate Contact Wiper Arm to Credit Position. (Fig. 2).
6. To get proper Cancel Slide "end play" clearance of $\frac{1}{32} \pm \frac{1}{64}$ slide APU10 backward or forward. This is IMPORTANT for unit to subtract properly. (Fig. 4). SEE NOTE BELOW.
7. Tighten screws, recheck "end play", and insert plug.

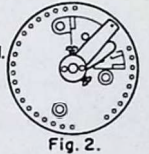


Fig. 2.

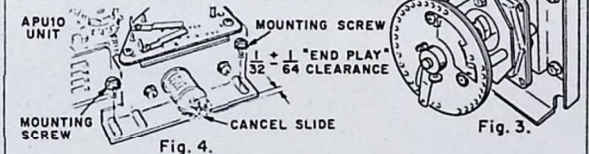
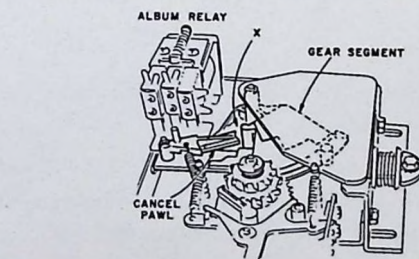


Fig. 3.



NOTE: TO AVOID BINDS, CHECK ADJUSTMENT AND ASSURE CORRECT SUBTRACT FUNCTION. ESTABLISH THIRTEEN (13) CREDITS AND, WITH ALBUM RELAY IN ENERGIZED POSITION, CHECK FOR CLEARANCE BETWEEN CANCEL PAWL AND GEAR SEGMENT AT POINT "X"; SEE ILLUSTRATION ABOVE.

MAINTENANCE AND SERVICE

CLEANING

The slug rejector should be kept free of dirt and dust. If a rejector has been working successfully and becomes erratic or fails to work at all, the trouble can generally be attributed to dirt or to some stoppage in the coin track. Cleaning only should correct the trouble.

Switch and relay contacts should be cleaned with a contact burnisher. Do not use a file, sandpaper, or emery cloth.

The contacts on the selector disc should be cleaned with a cloth saturated with carbon-tetrachloride. Do not use emery cloth or sandpaper. The contacts are silver plated brass. To sand them or clean them with an abrasive will remove the plating and expose the brass. The brass does not provide good contact and will require more frequent service as well as cause erratic operation. The contacts should not be lubricated.

The contact point on the contact arm should be cleaned with carbon-tet'. It is not necessary to remove it from the shaft. A piece of cloth saturated with carbon-tet' can be drawn under the contact point.

The selector switches should be kept free of dirt and dust by blowing out. Do not use roach powders of any kind. Most of the powders are highly corrosive and will soon cause failure of the switches. If powders have been used, the switches should be thoroughly cleaned.

LUBRICATION

The motor cams should be lubricated with Aero Lubriplate.

A drop or two of Seeburg No. 53014 Special Purpose Oil on the Motor Shaft bearings will reduce wear and friction to a minimum.

The scavenger linkage of the slug rejector can be sparingly lubricated with No. 105 Lubriplate at wear and friction points, but care should be taken so that it does not get into the coin track. Oil should not be used. The coin path of the rejector may be dusted with Motor Mica.

MOTOR

The motor is designed to operate the Consolette through a complete cycle in a little more

than 2 seconds. If the motor is slow, the current impulses to the step relay (in the Remote Control Stepper Unit) will be slow and cause erratic operation of the step switch assembly. The motor can best be checked for speed by allowing it to operate steadily and counting the turns per minute of the contact arm. Normal speed is 20 revolutions per minute. Acceptable speed limits are 19.5 to 21 rpm. If the motor is slow, check for binding or excessive friction. If the motor runs slow when there are no binds, it will have to be replaced.

COIN SWITCHES

If operation of the coin switches is erratic, the slug rejector must first be removed and then the coin switch contacts carefully cleaned with carbon-tetrachloride using a No. 2 camel hair brush. Burnish the contacts by inserting a burnishing tool between them. *Never use a file or sandpaper for contact cleaning.*

Adjustment of the coin switches is shown in Figure 20 and paragraphs A to D below.

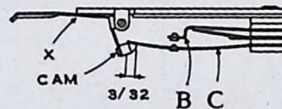


Figure 20.

- A. Adjust the coin levers so they are parallel with the bottom edge of the rejector when bearing against switch bracket at "X".
- B. Adjust short blade and bracer for $1/32''$ to $3/64''$ contact gap (all switches) with short blade bearing against tip of bracer approximately 1 to 3 grams (measured at contact point).
- C. Adjust the long blade so it bears against the cam, as measured at the switch contact.
 1. Nickel switch (front) - 8 to 10 grams
 2. Dime switch (middle) - 6 to 8 grams
 3. Quarter switch (back) - 8 to 10 grams
- D. Adjust the switch actuating cams to be tilted as shown and overlap the switch blade approximately $3/32''$.

CONTACT WIPER ARM POSITION

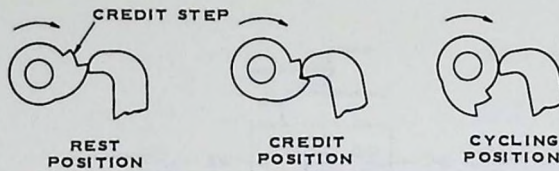


Figure 21. Cam Positions.

1. Turn the motor manually until the latch bar lever drops to the credit step of the cam and then reverse the direction until the point of the lever is against the vertical part of the cam as shown in *Figure 21* above.

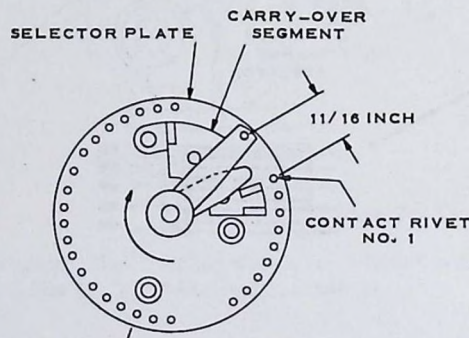


Figure 22. Wiper Arm Radial Adjustment.

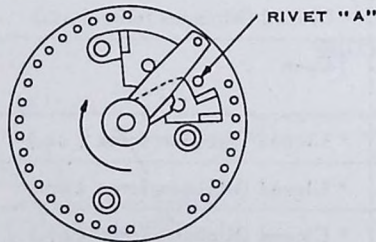


Figure 23. Rivet "A" Position.

2. Set the contact arm on the shaft so that center of outermost contact of the arm is approximately $11/16$ " away from the center of the first contact on selector plate, see *Figure 22*.

Innermost contact of wiper arm should be contacting rivet "A" on selector plate, see *Figure 23*.

3. Inner blade of the wiper arm is set so that it is approximately $3/32$ " from the surface of the selector plate as shown in *Figure 24*. Force "F" of outer contact must be from $1\frac{3}{4}$ to $2\frac{3}{4}$ ounces.

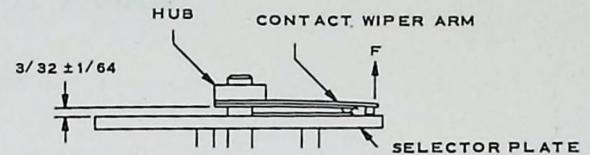


Figure 24. Wiper Arm Lateral Adjustment.

LATCH BAR ADJUSTMENT

The selection switches have three conditions of operation corresponding to the 3-positions of the cam shown in *Figure 21* and are operated by the cam through mechanical linkage. In the stand-by positions the switch latch bars are held against the pressure of the latch bar spring so the selector buttons are free to move in and out and will not stay in the pressed-in position. In the credit position the bars are released to a position which permits a selection switch, when pressed, to latch in the operated position but, if another switch is operated, the first will be released. In the cycling position the latch bars are fully released so the selection switches are locked in either the normal or pressed positions.

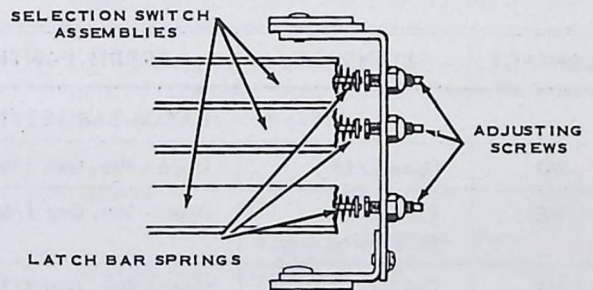


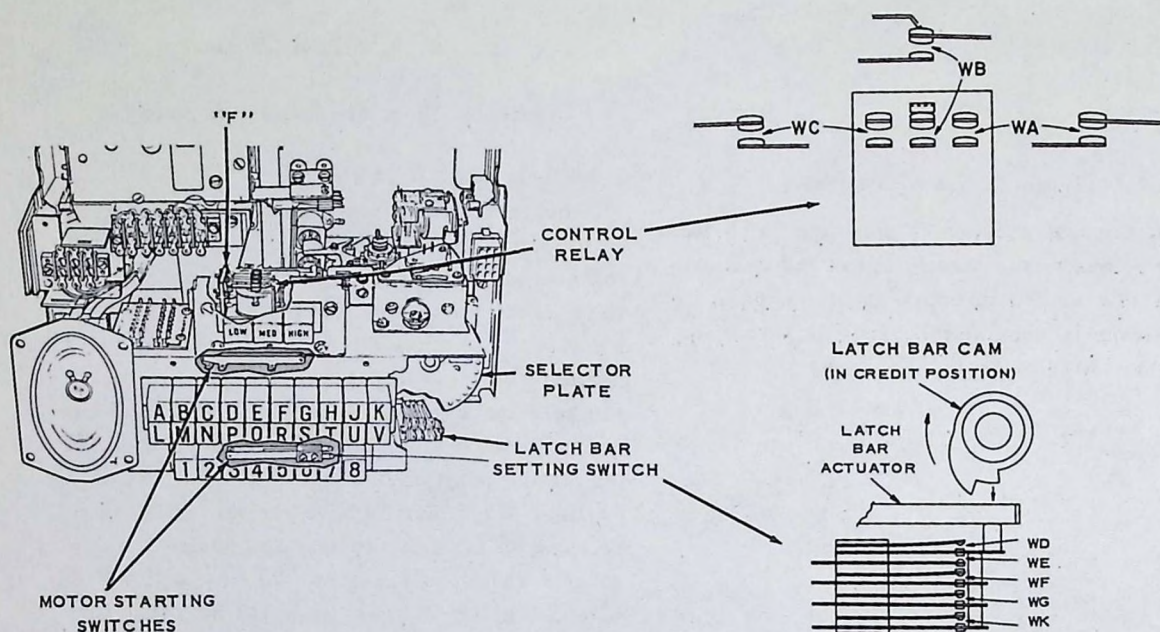
Figure 25. Latch Bar Adjusting Screws.

The adjustment for the latch bar operation is made with the screws - one for each selection switch assembly - at the right of the assemblies (shown in *Figure 25*) in the following manner:

1. Place the cam in the Credit Position (*Figure 21*).
2. Turn the adjusting screws until the selection switch shafts strike the latch bars, but do not latch in the pressed-in position.
3. Back out the screws $\frac{1}{2}$ to $\frac{3}{4}$ turn.
4. Check for positive locking of the switches when the cam is in Cycling "position".
5. Check for full release and free in-and-out movement of the switches when the cam is in stand-by position.

STEREO CONSOLETTTE, Type SC1

CONTACT OPERATION & GAP ADJUSTMENT



CONTACT	STAND-BY	CREDIT POSITION	CYCLING (CREDIT-CANCEL)
LATCH BAR SETTING SWITCH			
WD	Open 1/16	Open - Min. Gap 1/64	* Closed (Minimum force 1 oz.)
WE	Closed (Min. force 1 oz.)	Open - Min. Gap 1/64	† Open
WF	Open 1/16	Open - Min. Gap 1/32	* Closed (Minimum force 1 oz.)
WG	Open 1/16	Open - 1/32	* Closed (Minimum force 1 oz.)
WK	Open 1/16	Open - 1/32	* Closed (Minimum force 1 oz.)
* Contacts "WD", "WF", "WG", and "WK" close before innermost contact of wiper arm leaves carryover segment on selector plate assembly. (Figure 22)			
† Contacts "WD" remain closed until after innermost contact of wiper arm again reaches carryover segment on selector plate assembly. (Figure 22)			
MOTOR STARTING SWITCHES			
WH	The Motor Starting Switches should make contact at the bottom of the Selection Button Stroke. They should make contact as close as possible to the bottom and still maintain contact when any button on the Switch is latched in.		
WJ			
CONTROL RELAY			
WA	All Contacts Normally Open — Minimum Gap 1/64 — Minimum Force 1 oz. Pressure required to Start From Rest Position Measured at "F" is 2 oz. Coil Resistance is 33 Ohms ±10%.		
WB			
WC			

STEREO CONSOLETTTE, Type SC1
ALBUM PRICING UNIT, Type APU10-56

- ADD ADJUSTMENTS -

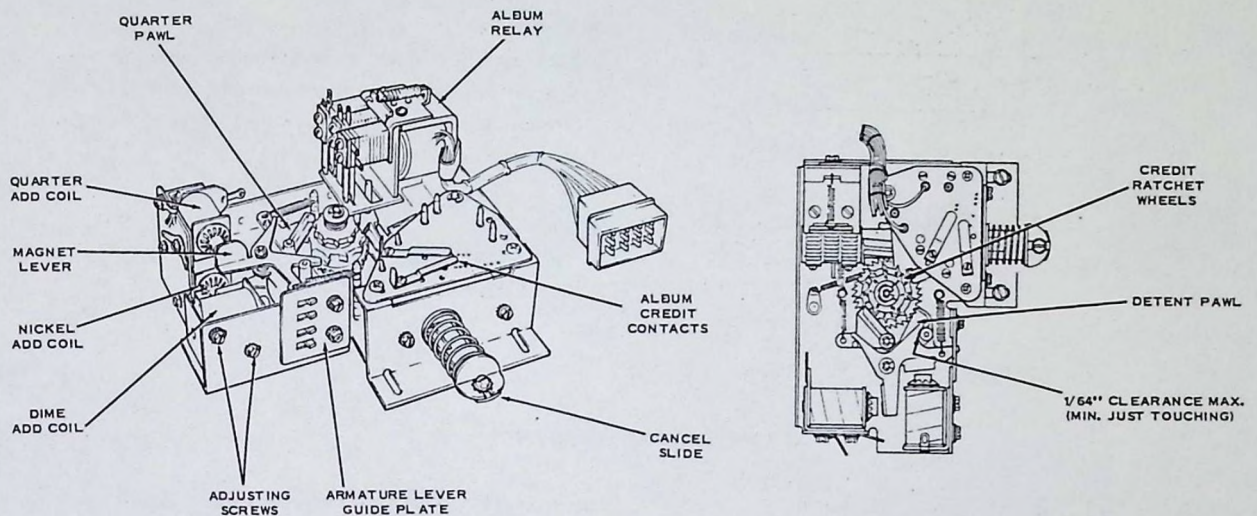
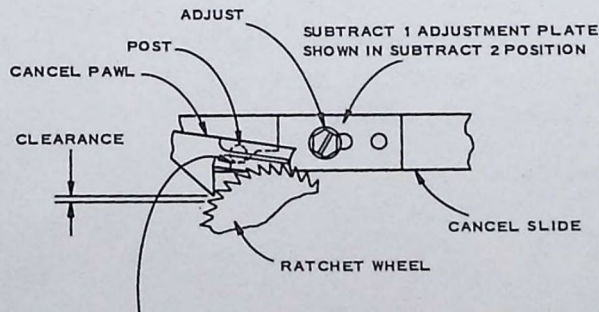


Figure 26. Component Identification.

1. Make certain that Ratchet Wheels are aligned with one another for 10¢ Add 2 and 25¢ Add 6.
2. Adjust all add coils so that the Detent Pawl is lifted out and clears periphery of Nickel Ratchet Wheel by 1/32 inch when Magnet Lever is seated on pole piece.
3. Adjust Armature Lever Guide Plate so that 1/64" clearance maximum (minimum just touching) exists between post on detent lever and all three (3) Magnet Levers. This is with cancel slide in Stand-by (depressed) position.
4. The three (3) Detent Pawls must each clear the teeth on their associated Ratchet Wheel. Re-adjust Armature Lever as required.

- SUBTRACT ADJUSTMENTS -



POST ON CANCEL PAWL MUST BE BEARING SLIGHTLY AGAINST THIS EDGE OF ADJUSTMENT PLATE AS PAWL ENTERS BRACKET, PART NO. 451565, AS REQUIRED TO MEET THIS REQUIREMENT.

Figure 27. Cancel Pawl Entry.

1. Adjust Subtract 1 Adjustment Plate for Subtract 2 and check entry of Cancel Pawl into ratchet teeth.
2. Establish eight (8) credits on Ratchet Wheel and adjust Slide Stop Bracket to allow return stroke of Cancel Slide to return Ratchet Wheel two (2) teeth.

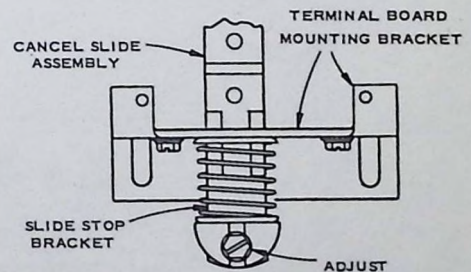


Figure 28. Slide Stop Bracket Adjustment.

3. Re-adjust Slide Stop Bracket slightly for over-travel as shown in Figure 29.

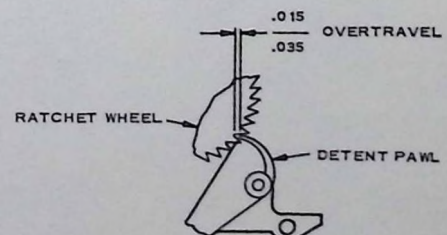


Figure 29. Over-travel Adjustment.

STEREO CONSOLETTTE, Type SC1

ALBUM PRICING UNIT, Type APU10-56

- SUBTRACT ADJUSTMENTS CONTINUED -

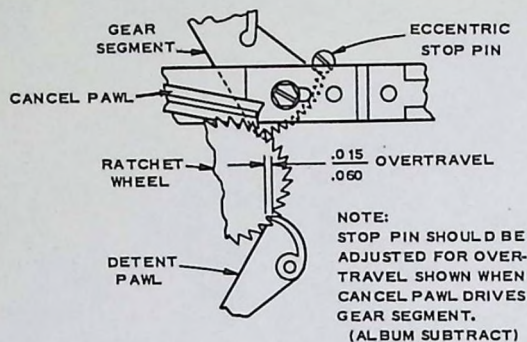


Figure 30. Album Subtract Adjustment.

4. Position of Album Relay Bracket must be such that when relay is energized, Cancel Pawl (Figure 30) is in position to pick up Gear Segment to cancel all credits.

NOTE:
IF RELAY BRACKET IS RE-ADJUSTED, RECHECK REQUIREMENTS OF PARAGRAPH NO. 1.

- CONTACT ADJUSTMENTS -

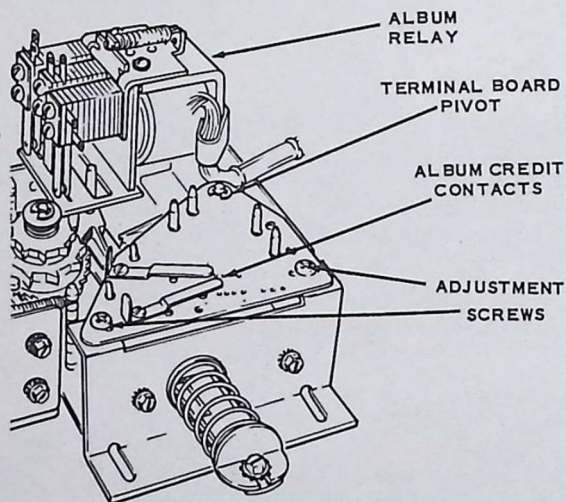
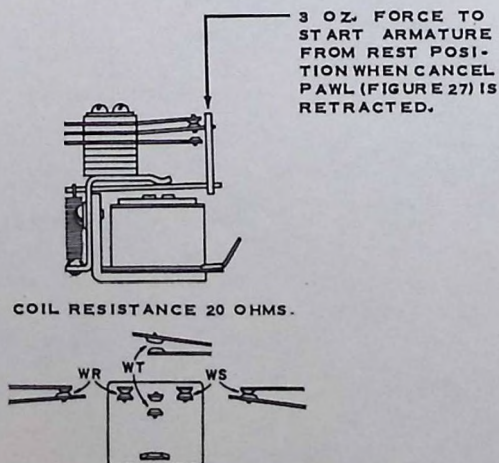


Figure 31. Component Identification.

(Refer to APU10-56 schematic on Page 12131.)

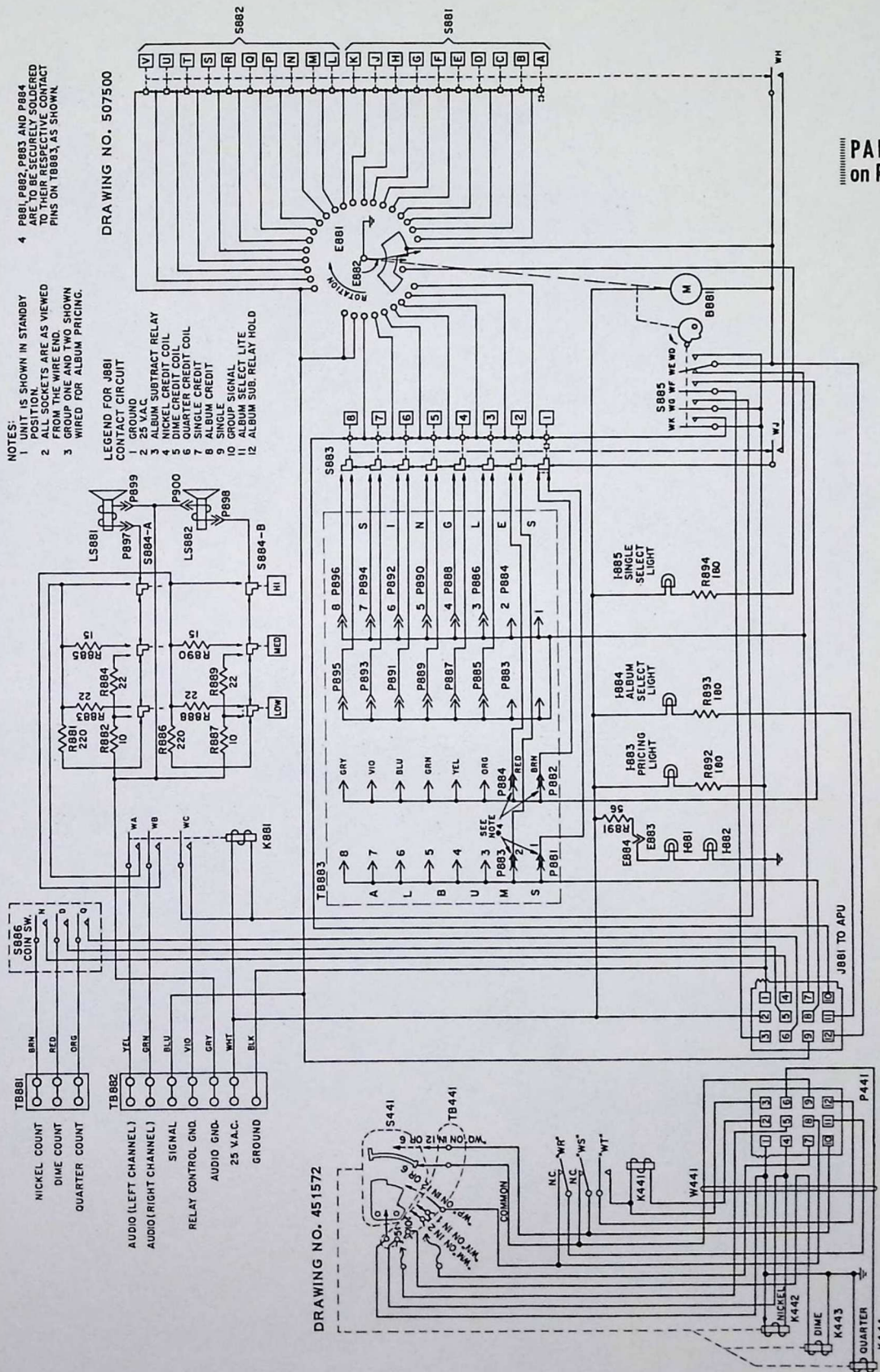
1. Contact pins and springs (Contact "WP" and "WQ") should be "ON in 12" position. Pins should bear against contact segment and plate with 1 oz. pressure.
2. Contact springs (2 commons and "WM" and "WN") must bear against segment on plate with 1 oz. pressure.
3. Adjust by loosening adjustment screws (Figure 31) and positioning terminal board to meet the following requirements:
Contact "WN" - On in 1 credit
Contact "WM" - On in 2 credits
(continuity to P441 Pin 1)
Contact "WP" - On in 12 credits
Contact "WQ" - On in 12 credits
(continuity to P441 Pin 9)

- ALBUM RELAY ADJUSTMENTS -



Contacts "WR" and "WS" normally closed with 1 oz. minimum pressure. Contact "WT" normally open with 1/64 inch minimum gap. When relay is energized, contact "WT" closes with 1 oz. minimum pressure and "WR" and "WS" open with 1/64 inch minimum gap.

STEREO CONSOLETTTE, Type SC1



PARTS LIST
on Reverse Side

STEREO CONSOLETTTE, TYPE SC1.

ALBUM PRICING UNIT, TYPE APU10-56

STEREO CONSOLETTTE, Type SC1

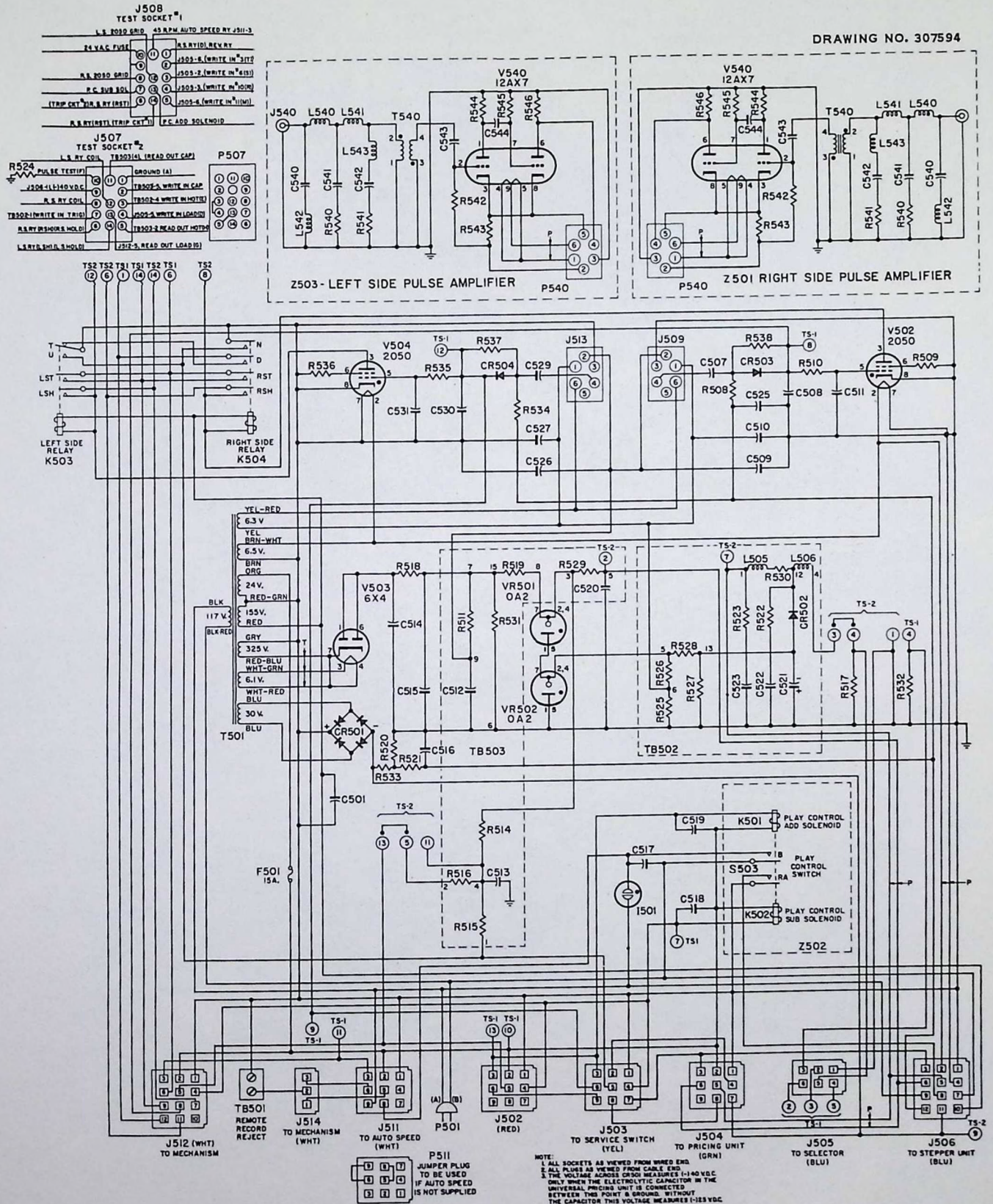
Parts List for Stereo Consolette, Type SC1

Parts List for Album Pricing Unit, Type APU10-56

Item	Part No.	Description	Item	Part No.	Description	Item	Part No.	Description
K441	451566	Album Relay	B881	507311	Motor Assembly	R881	81234	220 Ohm 2 W. $\pm 10\%$
K442	451546	Nickel Credit Coil Assembly	E881	507347	Selector Plate Assembly	R882	82400	10 Ohm $\frac{1}{2}$ W. $\pm 10\%$
K443	451549	Dime Credit Coil Assembly	E882	507733	Contact Wiper Arm Assembly	R883	81230	22 Ohm 2 W. $\pm 10\%$
K444	451546	Quarter Credit Coil Assembly	E883	507514	Brush Assembly	R884	82404	22 Ohm $\frac{1}{2}$ W. $\pm 10\%$
P441	307048	12 Contact Plug	E884	507448	Contact Assembly	R885	82402	15 Ohm $\frac{1}{2}$ W. $\pm 10\%$
S441	451518	Gear Segment Assembly	I 881	507522	No. 19 Lamp	R886	81234	220 Ohm 2 W. $\pm 10\%$
TB441	451552	Terminal Board Assembly	I 882	507522	No. 19 Lamp	R887	82400	10 Ohm $\frac{1}{2}$ W. $\pm 10\%$
W441	451569	Cable Assembly	I 883	507522	No. 19 Lamp	R888	81230	22 Ohm 2 W. $\pm 10\%$
			I 884	507522	No. 19 Lamp	R889	82404	22 Ohm $\frac{1}{2}$ W. $\pm 10\%$
			I 885	507522	No. 19 Lamp	R890	82402	15 Ohm $\frac{1}{2}$ W. $\pm 10\%$
			J 881	307153	12 Contact Socket	R891	81235	56 Ohm 2 W. $\pm 10\%$
			K881	507795	Control Relay	R892	81232	180 Ohm 5 W. $\pm 10\%$
			LS881	507370	Speaker	R893	81232	180 Ohm 5 W. $\pm 10\%$
			LS882	507370	Speaker	R894	81232	180 Ohm 5 W. $\pm 10\%$
			P881 } Thru } P896 }	132054	Receptacle	S881	507351	Top Selector Switch
						S882	507352	Center Selector Switch
						S883	507353	Bottom Selector Switch
						S884A } S884B }	507366	Control Switch
						S885	507794	Latch Bar Setting Switch
						S886	507326	Coin Switch
			P897	941785	Receptacle	TB881	505958	3 Lug Terminal Board
			P898	941785	Receptacle	TB882	507521	6 Lug Terminal Board
			P899	941776	Receptacle	TB883	507360	Terminal Board Assembly
			P900	941776	Receptacle			

TORMAT CONTROL CENTER, Type TCC1 and TCC2

DRAWING NO. 307594



Schematic Diagram (Code A)

TORMAT CONTROL CENTER, Type TCC1 and TCC2

Item	Part No.	Description	Item	Part No.	Description
C501	86154	0.02 Mfd. 600 V. Paper	P501	307589	Line Cord & Plug Assembly
C507	86248	0.15 Mfd. $\pm 10\%$ 200 V. Paper	P507	307557	12 Prong Plug Assembly
C508	86154	0.02 Mfd. 600 V. Paper	P511	307598	Auto-Speed Replacement Jumper Plug Assem.
C509	86251	3000 Mmf 500 V. Ceramic	P540	303599	6 Prong Plug
C510	86313	0.01 Mfd. 500 V. Ceramic			
C511	86255	2000 Mmf 500 V. Ceramic	R508	82464	2.2 Megohm $\pm 10\%$ $\frac{1}{2}$ W.
C512	87637	10 Mfd. 450 V. Lytic	R509	82440	22,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C513	86296	0.15 Mfd. $\pm 10\%$ 600 V. Paper	R510	82456	470,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C514	87635	15 Mfd. 450 V. Lytic	R511	308975	27,000 Ohm $\pm 5\%$ 2 W.
C515	87635	15 Mfd. 450 V. Lytic	R514	82837	56,000 Ohms $\pm 10\%$ 2 W.
C516	87571	25 Mfd. 50 V. Lytic	R515	82432	4,700 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C517	86317	0.01 Mfd. 1400 V. Ceramic	R516	308971	36 Ohms $\pm 5\%$ $\frac{1}{2}$ W.
C518	86313	0.01 Mfd. 500 V. Ceramic	R517	82442	33,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C519	86313	0.01 Mfd. 500 V. Ceramic	R518	81194	3,300 Ohms Fuse Resistor $\pm 10\%$ 5 W.
C520	86295	0.068 Mfd. 600 V. Paper	R519	82836	2,700 Ohms $\pm 10\%$ 2 W.
C521	87636	10 Mfd. 150 V. Lytic	R520	82431	3,900 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C522	86313	0.01 Mfd. 500 V. Ceramic	R521	82456	470,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C523	86313	0.01 Mfd. 500 V. Ceramic	R522	82617	47 Ohms $\pm 5\%$ $\frac{1}{2}$ W.
C525	86251	3000 Mmf. 500 V. Ceramic	R523	82617	47 Ohms $\pm 5\%$ $\frac{1}{2}$ W.
C526	86251	3000 Mmf. 500 V. Ceramic	R524	82437	12,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C527	86313	0.01 Mfd. 500 V. Ceramic	R525	82454	330,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C529	86248	0.15 Mfd. $\pm 10\%$ 200 V. Paper	R526	82451	180,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C530	86154	0.02 Mfd. 600 V. Paper	R527	82698	150,000 Ohms $\pm 5\%$ $\frac{1}{2}$ W.
C531	86255	2000 Mmf. 500 V. Ceramic	R528	82611	3,000 Ohms $\pm 5\%$ $\frac{1}{2}$ W.
C540	86253	360 Mmf. $\pm 10\%$ 500 V. Ceramic	R529	82998	270,000 Ohms $\pm 10\%$ 1 W.
C541	86252	1200 Mmf. $\pm 10\%$ 500 V. Ceramic	R530	82617	47 Ohms $\pm 5\%$ $\frac{1}{2}$ W.
C542	86253	360 Mmf. $\pm 10\%$ 500 V. Ceramic	R531	82460	1 Megohm $\pm 10\%$ $\frac{1}{2}$ W.
C543	86251	3000 Mmf. 500 V. Ceramic	R532	82442	33,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
C544	86030	0.05 Mfd. $\pm 10\%$ 400 V. Paper	R533	82424	1,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
CR501	400587	Selenium Rectifier	R534	82464	2.2 Megohm $\pm 10\%$ $\frac{1}{2}$ W.
CR502	309384	Silicon Rectifier	R535	82456	470,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
CR503	309384	Silicon Rectifier	R536	82440	22,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
CR504	309384	Silicon Rectifier	R537	82462	1.5 Megohm $\pm 10\%$ $\frac{1}{2}$ W.
F501	307556	Fuse 15 Amp.	R538	82462	1.5 Megohm $\pm 10\%$ $\frac{1}{2}$ W.
I 501	307572	Neon Lamp	R540	82409	56 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
J 502	307562	Chassis Connector Housing (Red, 9)	R541	82409	56 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
	941757	Contact	R542	82444	47,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
J 503	307563	Chassis Connector Housing (Yellow, 9)	R543	82610	6200 Ohms $\pm 5\%$ $\frac{1}{2}$ W.
	941757	Contact	R544	82456	470,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
J 504	307564	Chassis Connector Housing (Green, 9)	R545	82469	5.6 Megohms $\pm 10\%$ $\frac{1}{2}$ W.
	941757	Contact	R546	82640	27,000 Ohms $\pm 5\%$ $\frac{1}{2}$ W.
J 505	307561	Chassis Connector Housing (Blue, 6)	S 503	303481	Play Control Switch
	941757	Contact	T501	307587	Power Transformer
J 506	307565	Chassis Connector Housing (Blue, 12)	*T501	307588	Power Transformer
	941757	Contact	T540	303457	Pulse Transformer
J 507	306014	14-Connector Socket			
J 508	306014	14-Connector Socket	TB501	307650	Terminal Board (2 Terminals)
J 509	301034	6 Prong Socket (Small)	TB502	307567	Terminal Board Assembly
J 511	84315	Chassis Connector Housing (White, 9)	TB503	307568	Terminal Board Assembly
	941757	Contact			
J 512	307153	Chassis Connector Housing (White, 12)	V502	308003	2050 Thyatron
	941757	Contact	V503	308626	6X4 Vacuum Tube
J 513	301034	6 Prong Socket (Small)	V504	308003	2050 Thyatron
J 514	803722	Chassis Connector Housing (White, 3)	V540	308120	12AX7 Vacuum Tube
	941757	Contact	VR501	308005	OA2 Voltage Regulator Tube
J 540	303446	Single Prong Socket	VR502	308005	OA2 Voltage Regulator Tube
K501	303482	Play Control Add Solenoid Assembly	Z501	303435	Pulse Amplifier Unit
K502	303484	Play Control Subtract Solenoid Assem.	Z502	303464	Play Control Assembly
K503	307590	Left Side Relay	Z503	303435	Pulse Amplifier Unit
K504	307592	Right Side Relay			
L505	303603	130 μ h Choke $\pm 5\%$	XVR501	84295	7 Pin Miniature Socket
L506	303702	100 μ h Choke $\pm 5\%$	XVR502	84295	7 Pin Miniature Socket
L540	303602	16 μ h Choke $\pm 5\%$	XV502	84292	Octal Socket
L541	303602	16 μ h Choke $\pm 5\%$	XV503	84295	7 Pin Miniature Socket
L542	303600	11 μ h Choke $\pm 5\%$	XV504	84292	Octal Socket
L543	303600	11 μ h Choke $\pm 5\%$	XV540	84304	9 Pin Miniature Socket

* Components used for 50 cycle operation only.

SEEBURG

TRANSISTORIZED AUTO SPEED UNIT, Type 45TASU1

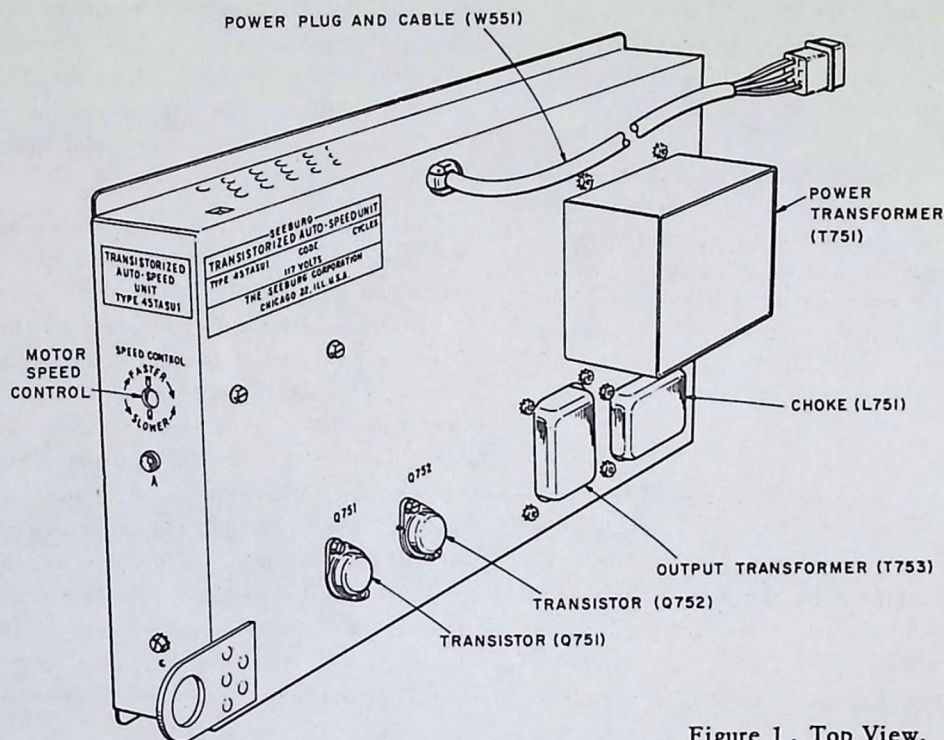


Figure 1. Top View.

The Transistorized Auto Speed Unit, Type 45TASU1, supplies 80-cycle AC power to the motor of the LPC Select-O-Matic phonograph when 45 rpm records are played. It is fully transistorized with power generated by a power converter that is controlled through circuits associated with the phonograph.

In addition to the power converter and its regulated power supply, the unit includes a Power Control Relay, a Motor Speed Control and a Test Point.

A saturable transformer (T751) used in conjunction with the choke (L751) and the condenser (C751) serves to regulate the input voltage to the converter transistors.

The converter transistors, Q751 and Q752, use the unit chassis for heat dissipation and must be held firmly to it with the mounting screws. The cases of these transistors are insulated from the chassis with mica washers. If one of the transistors is removed or changed, a new mica washer should be used and the washer should be coated with a liberal amount of silicone grease on both sides. Excess grease should be wiped off after the transistor is securely fastened in place.

In the application of the 45TASU1, the desired frequency for turntable speed of 45 rpm is approximately 80 cycles and is determined by using a strobe disc on the turntable. 7-inch strobe disc Part No. 487388 is used for 60 cycle operation and disc Part No. 487389 is for 50 cycle operation.

The adjustment should be made as follows:

1. Replace a record with the appropriate Auto Speed Strobe Disc. Light source frequency must conform to frequency indicated on the Strobe Disc.
2. Select Strobe Disc on to the mechanism turntable and carefully prop pickup arm out of the way.
3. Allow unit to run approximately 3 minutes.
4. Set the motor speed to 45 rpm. by adjusting the Motor Speed Control so that the outer and inner bands on the Strobe Disc move in opposite directions.
5. Remove the Strobe Disc.

TRANSISTORIZED AUTO-SPEED UNIT, Type 45TASU1

The output voltage and frequency remain relatively constant over a wide range of supply line voltage and load conditions because of the inherent stability achieved by regulating the DC power to the converter.

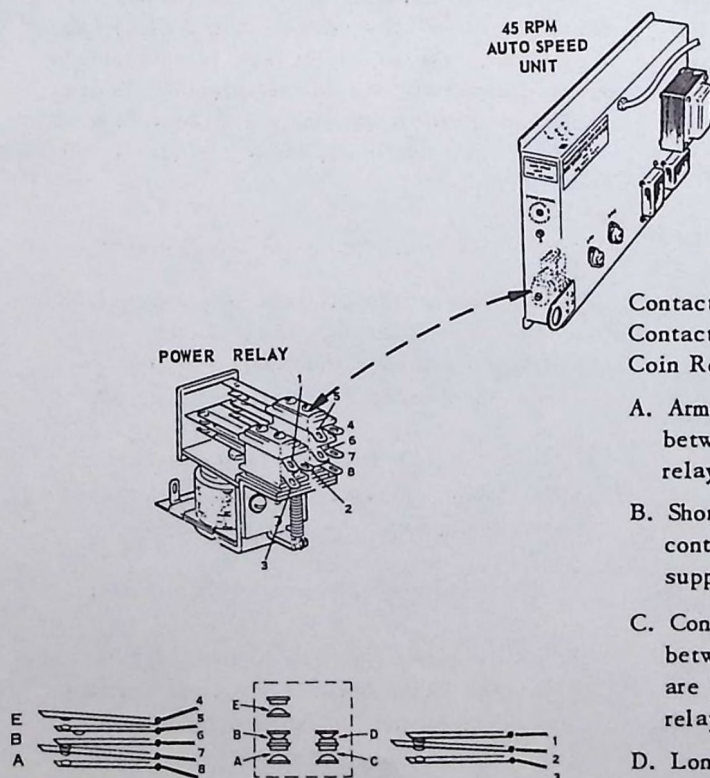
The Power Control Relay, when energized, transfers the phonograph motor connections from 60 to 80 cycle supply. It is controlled by a circuit that includes a single-pole, normally open clamp arm switch that is actuated by the record clamp arm on the mechanism. The size of the record spindle hole determines how far the clamp arm moves and whether or not the switch is actuated.

The 33-1/3 rpm record has a 5/16 inch spindle hole. It centers on the turntable with a 5/16 inch clamp arm centering pin and is held against the turntable by the face of the concentric 1 1/2 inch, 45 rpm centering "pin". When a 45 rpm record (with its 1 1/2 inch spindle hole) is played, the 1 1/2 inch diameter pin passes

through and the record is held against the turntable by the flat surface of the clamp disc. When a 45 rpm record is clamped, the clamp arm moves inward far enough to close the clamp arm switch. There is less arm movement when a 33-1/3 rpm record is clamped and the switch remains open.

The clamp arm switch is in series with the "P" contact on the cam switch and the "IC" contact on the reset lever switch. It provides a 25 volt circuit for the Power Control Relay. The IC contact is closed when a record is playing and opened when the mechanism is tripped from play. The "P" contact on the cam switch is closed only in the playing position. The clamp arm switch is closed when a 45 rpm record is clamped. The only time the relay is energized and power is supplied to the unit is when the mechanism is playing a 45 rpm record. At all other times - during transfer, scan and while playing a 33-1/3 rpm record - the relay is not energized and the motor is operating at 60 cycles.

POWER RELAY - CONTACT GAP AND PRESSURE ADJUSTMENTS



Contacts A, B, C and D - Motor Circuit.
Contact E - Input Power Circuit.
Coin Resistance (D.C.) - 24 ohms $\pm$ 10%

- A. Armature travel should be 1/16 inch measured between armature and armature back stop when relay is energized.
- B. Short blades should move 1/64 inch when contacts make and break and bracers must support their respective contact blades.
- C. Contact gap should be 1/32 inch as measured between B and D contacts when A, C and E are just opening. Check by manually releasing relay from energized position.
- D. Long blades must touch the bottom of their respective slots in the lift when B and D are just closing.

SEEBURG

TRANSISTOR MICROPHONE PREAMPLIFIER SYSTEM

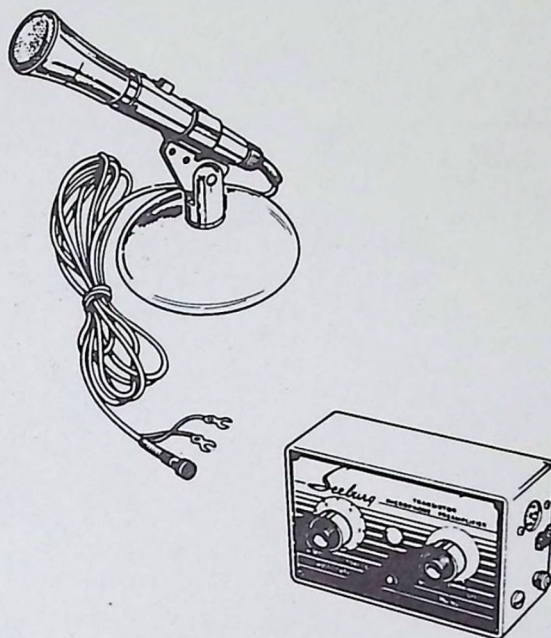
Type TMPS4-56

The Type TMPS4-56 Transistor Microphone Preamplifier System has been designed for use with music and sound distribution systems in applications requiring a microphone and associated equipment. Although intended for use with the Seeburg Phonograph, it can be associated as a whole or in part with other systems. It is ideally suited for use as a floor show pick-up, paging or announcing. The System includes a Type TMPA-1 Transistor Microphone Preamplifier, Type PS17-56 Preamplifier Power Supply, a Microphone, and the necessary cables and hardware for an installation in a Seeburg Select-O-Matic LPC1 or LPC1R Model phonograph as detailed in specific instructions prepared for the phonographs.

A 12-foot cable connects the microphone to the preamplifier; the preamplifier is connected to the power supply by a 60-foot cable. They may be located anywhere within the limits of the cable lengths. The power supply is connected to the phonograph with a 5-conductor shielded cable and a 3-wire cable and plug; and is mounted inside or near the phonograph cabinet. The connections to the phonograph are all that are required for control of the System and phonograph and are shown in *Figure 2*.

The microphone is a general purpose magnetic microphone having frequency response that makes it suitable for studio, stage or public address use. It is a low impedance, magnetic type that may be hand held or placed in an adjustable desk stand. It has a control switch that may be used for press-to-talk operation or locked in the "on" position.

The power supply may be connected to the phonograph for power at line voltage (117 volts 50-60 cycle AC) and is then turned on when the phonograph main switch is on. It supplies power for the microphone preamplifier and for two control relays that are in the unit. These relays are operated by a switch on the microphone preamplifier and by a press-to-talk switch on the microphone.



The preamplifier is the control unit for the system. It includes the microphone preamplifier, a three-position control switch for selecting system operation, microphone tone and volume controls, and a pilot light to indicate that the system is in operation. The control switch operates two relays that are a part of the power supply unit. These relays, in turn, control the signal circuits and the power for operation of the phonograph. In the "OFF" position of the control switch the phonograph operation is unaffected in any manner and the microphone and preamplifier are not in use.

In the PAGING position of the switch, power is being furnished to the microphone preamplifier but the phonograph operation is unaffected until the press-to-talk switch on the microphone is operated. When this switch is pressed, the microphone is placed in operation, the pilot light on the preamplifier is lighted and the phonograph amplifier is turned on. If the phonograph is playing when the press-to-talk switch is operated, the phonograph volume is reduced.

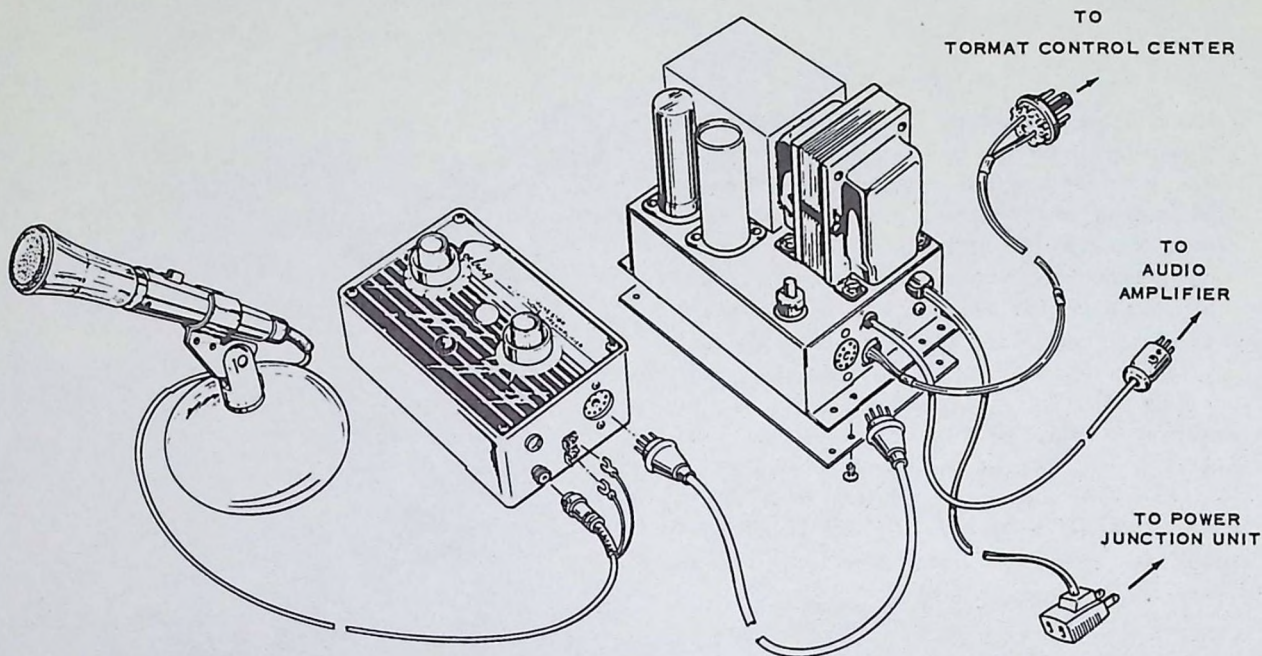


Figure 2.

When the control switch is in the MIC ON position, the phonograph sound is completely cut off, leaving only the microphone signal. When the switch is turned to this position, a phonograph record, if one is playing, is rejected and the phonograph motor is turned off. If phonograph selections are made at this time or if there are selections in the phonograph yet to be played, they will be stored in the selection system of the phonograph and will be played when the system control switch is moved to either the paging or off system.

If there are applications requiring more than one microphone, an additional preamplifier section, Part No. 503440, can be added and can be installed within the Type TMPA-1 preamplifier cabinet as detailed in the instruction accompanying the preamplifier.

INSTALLATION

The use of a microphone in the same room with loudspeakers requires careful placement of

the microphone with respect to the speakers to avoid feedback (howl). The speakers and microphone should be located so no speaker within 35 feet of the microphone is "beamed" directly at the microphone. Where speakers are used within this distance, the microphone should be placed so the sound waves from such speakers do not strike it directly. In addition, the microphone should always face away from nearby speakers.

Install the microphone preamplifier so it has free circulation of air. Exposure to high temperature resulting from installing on a radiator or in direct sunlight can affect microphone tone and reduce volume and can permanently damage preamplifier transistors. If possible, set the preamplifier in such position as to be inaccessible to unauthorized persons. If the preamplifier is to be permanently located, the interconnecting cable, should be run in corners, under moulding, or in other inconspicuous places and secured as required by furnished cable clamps.

OPERATION CHART

UNIT OPERATION	PHONOGRAPH ONLY	MICROPHONE ONLY	MIXING PHONOGRAPH AND MICROPHONE	PAGING SYSTEM
Control Switch Setting	"OFF" or "PAGING"	"MIC ON" *	"PAGING" and microphone press-to-talk switch pressed.	"MIC ON" * operate microphone press-to-talk switch as required.
Press-to-talk switch	Not in operation	Pressed or locked in pressed position.	Operated as required.	See above.
"Microphone Volume" Setting	Not in operation	To obtain desired microphone volume.	To obtain desired microphone volume.	To obtain desired microphone volume.
Microphone Tone Setting	Not in operation	As desired.	As desired.	As desired.
Operation	Phonograph operates same as before Microphone Preamplifier was installed.	Phonograph does not play. *	Phonograph music mixed with microphone signal when press-to-talk switch operated. Remote or phonograph volume control setting will determine phonograph volume; volume of microphone determined by setting of volume control on preamplifier.	When paging is desired the press-to-talk switch on the microphone is pressed and held or locked in the pressed position. When paging is completed the press-to-talk switch is released.

- NOTE:
1. When the control switch is in the "off" position, the controls on the microphone preamplifier and the press-to-talk switch on the microphone have no effect on operation of the phonograph.
 2. When the control switch is turned to the MIC ON position, a phonograph record, if one is playing, will be rejected and the phonograph motor turned off. Phonograph selections made while the switch is in this position and previously made unplayed selections will be stored in the phonograph selection system and will be played when the switch is moved to OFF or PAGING.

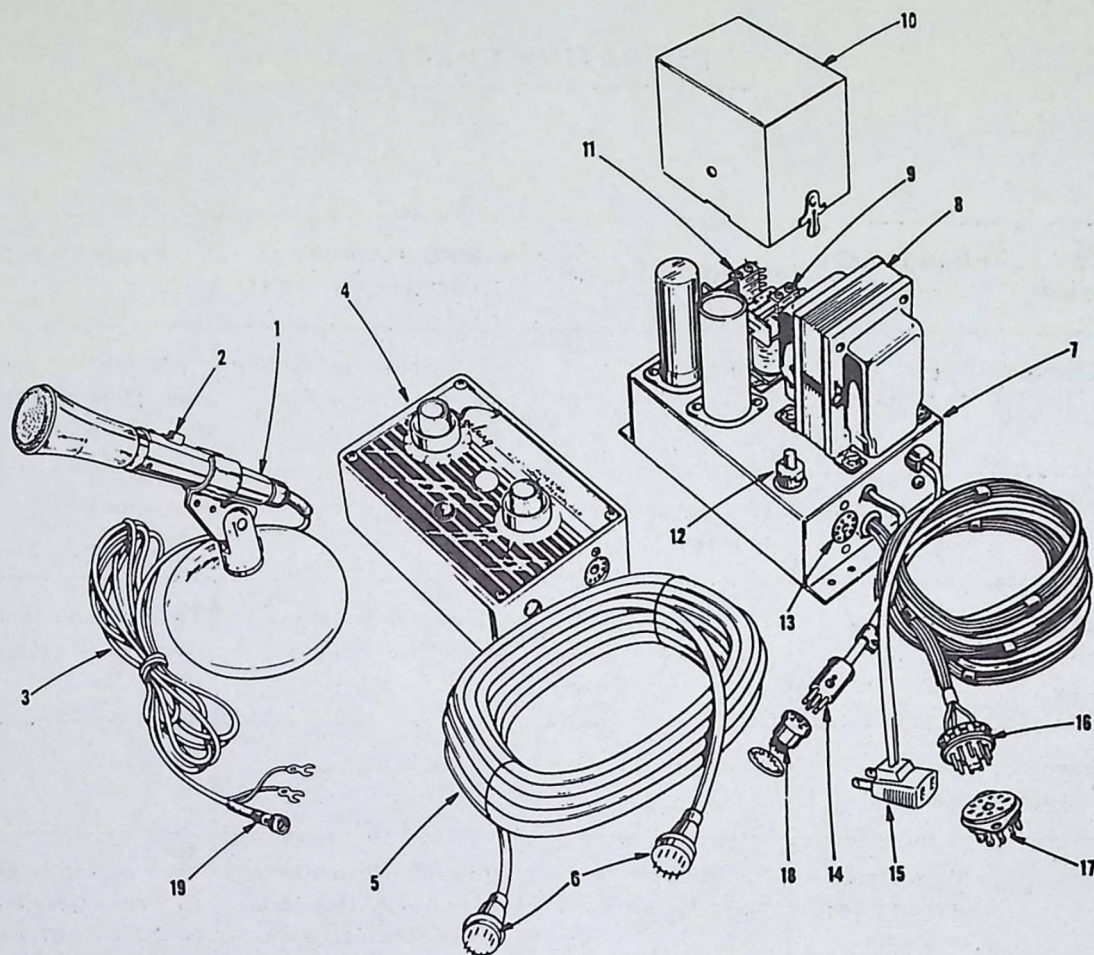
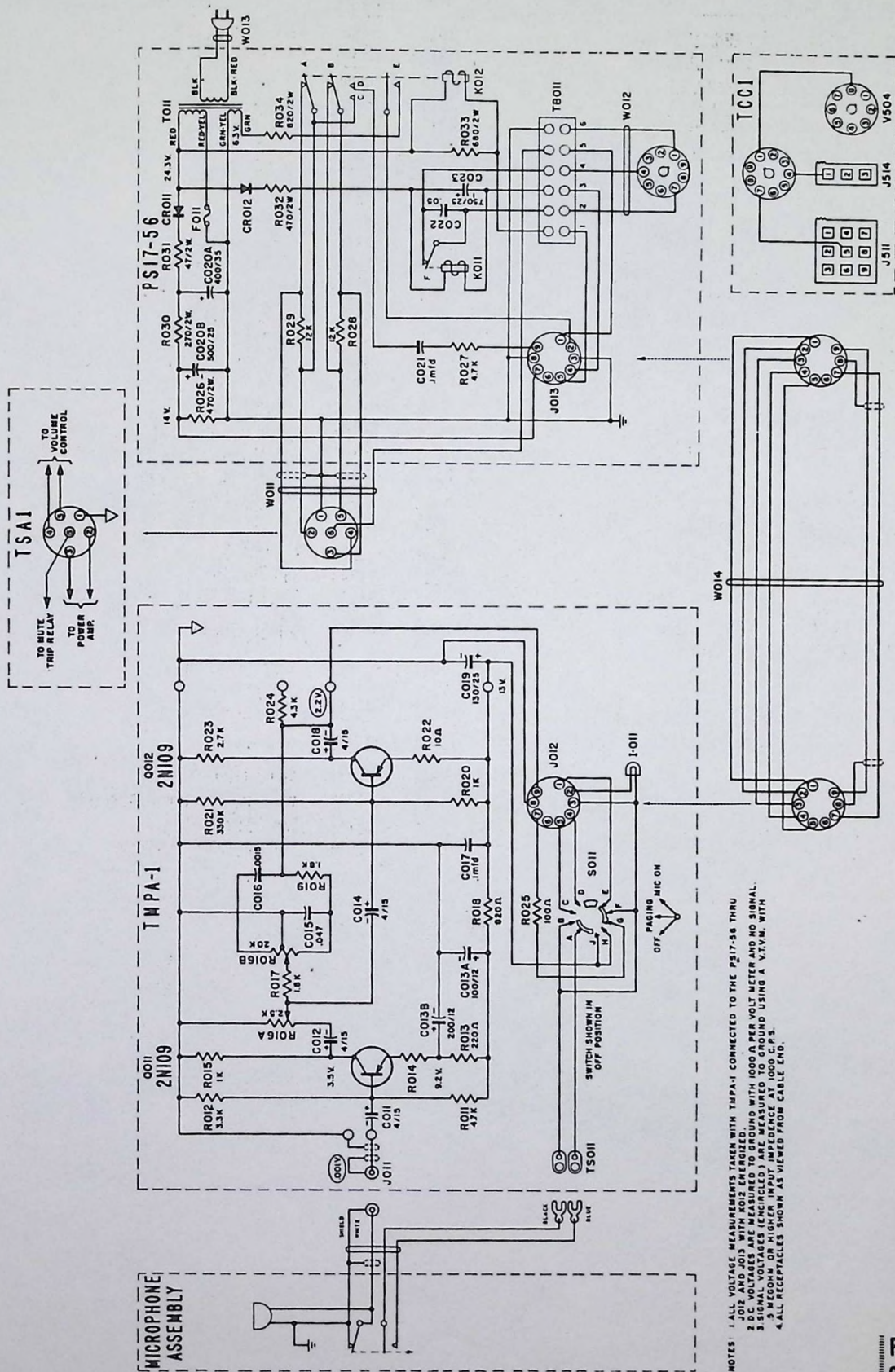


Figure 3.

Item	Part No.	Description	Item	Part No.	Description
1	503940	Microphone & Desk Stand	13	84298	Noval Socket
2	503944	Microphone Switch	14	302741	Audio Cable Assembly (W011)
3	503949	Cable with Connectors & Terminals		302742	Audio Cable Only
	503950	Cable Only (12 ft.)		F-8827	6-Pin Plug
4	302570	Transistor Microphone Preamplifier	15	302747	Line Cord (W013)
5	302614	Control Cable Assembly (Complete) (W014)		302343	Strain Relief
	302615	Control Cable Only (60 ft.)			
6	305322	9-Prong Plug Assembly	16	302743	Motor Control Cable Assembly (W012)
7	302725	Preamplifier Power Supply		12069	9-Prong Plug
8	305487	Power Transformer	17	302744	9-Pin Socket Wiring Assembly (Wires Not Shown)
9	302738	Relay		84244	9-Pin Socket
10	503077	Relay Shield Assembly	18	302745	6-Pin Socket Wiring Assembly (Wires Not Shown)
11	302737	Paging Relay		11759	6-Pin Socket Assembly
12	305496	Fuse Holder	19	503951	Microphone Connector
	303693	Fuse Receptacle Clip			
	305497	1 3/4 Amp. Fuse			

TRANSISTOR MICROPHONE PREAMPLIFIER SYSTEM, Type TMPS4-56



NOTES: 1. ALL VOLTAGE MEASUREMENTS TAKEN WITH THPA-1 CONNECTED TO THE P₅₁₇-56 THRU J012 AND J015 WITH K02 ENERGIZED.
2. J012 AND J015 REQUIRED TO GROUND WITH 1000 Ω PER VOLT METER AND NO SIGNAL.
3. SIGNAL VOLTAGES EXCEEDED 100 V. WITH 1000 Ω PER VOLT METER AND NO SIGNAL.
4. 9 MEGOHM OR HIGHER INPUT IMPEDANCE AT 1000 C.P.S.
5. ALL RECEPTACLES SHOWN AS VIEWED FROM CABLE END.

PARTS LIST 
on Reverse Side

TRANSISTOR MICROPHONE PREAMPLIFIER SYSTEM, Type TMPS4-56

Item	Part No.	Description	Item	Part No.	Description
C011	87711	4 Mfd. 15 V. Lytic	R011	82627	4700 Ohm 5% ½ W.
C012	87711	4 Mfd. 15 V. Lytic	R012	82642	3300 Ohm 5% ½ W.
C013A } C013B }	87656 }	100 Mfd. 12 V. Lytic 200 Mfd. 12 V. Lytic	R013	82658	220 Ohm 5% ½ W.
C014	87711	4 Mfd. 15 V. Lytic	R014	82643	10 Ohm 5% ½ W.
C015	86298	0.047 Mfd. 200 V. Paper	R015	82620	1000 Ohm 5% ½ W.
C016	86240	1500 Mfd. Ceramic	R016A } R016B }	302589 }	25,000 Ohm 200,000 Ohm
C017	86316	0.1 Mfd. 100 V. Ceramic	R017	82439	18,000 Ohm 10% ½ W.
C018	87711	4 Mfd. 15 V. Lytic	R018	82423	820 Ohm 10% ½ W.
C019	87717	130 Mfd. 25 V. Lytic	R019	82439	18,000 Ohm 10% ½ W.
C020A } C020B }	87727 }	400 Mfd. 35 V. Lytic 500 Mfd. 25 V. Lytic	R020	82634	10,000 Ohm 5% ½ W.
C021	86334	0.1 Mfd. 50 V. Mylar	R021	82454	330,000 Ohm 10% ½ W.
C022	86146	0.05 Mfd. 600 V. Paper	R022	82643	10 Ohm 5% ½ W.
C023	87728	750 Mfd. 25 V. Lytic	R023	82670	2,700 Ohm 5% ½ W.
CR011	309384	Silicon Diode	R024	82999	4,300 Ohm 5% ½ W.
CR012	309384	Silicon Diode	R025	82412	100 Ohm 10% ½ W.
F011	305497	1¼ Amp. Fuse	R026	81239	470 Ohm 5% 2 W.
I 011	302596	No. 49 Lamp	R027	82432	4,700 Ohm 10% ½ W.
J 011	302597	Microphone Connector	R028	82437	12,000 Ohm 10% ½ W.
J 012	84298	Noval Socket	R029	82437	12,000 Ohm 10% ½ W.
J 013	84298	Noval Socket	R030	81238	270 Ohm 10% 2 W.
K011	302738	Relay - Motor Control	R031	81236	47 Ohm 10% 2 W.
K012	302737	Relay - Paging	R032	81239	470 Ohm 5% 2 W.
Q011	308950	2N109 Transistor	R033	81240	680 Ohm 10% 2 W.
Q012	308950	2N109 Transistor	R034	81237	82 Ohm 10% 2 W.
			S 011	302580	Selector Switch
			T 011	305487	Power Transformer
			TB011	302739	Terminal Board
			TS011	941504	Terminals
			W011	302741	Audio Cable Assembly
			W012	302743	Motor Control Cable Assembly
			W013	302747	Line Cord & Plug
			W014	302614	Control Cable Assembly

SEEBURG

TRANSISTOR MICROPHONE PREAMPLIFIER SYSTEM, Type TMPS4-56 WITH SELECT-O-MATIC MODELS LPC1 AND LPC1R

The Type TMPS4-56 Transistorized Microphone Preamplifier System may be used with Select-O-Matic LPC1 and LPC1R Models by installing a 9-prong socket in the Tormat Control Center, a 6-prong socket in the Transistorized Stereo Amplifier and making the required changes indicated in the following illustrations and diagrams.

MODIFICATION OF TSA1

Unscrew the volume control and bracket assembly from the amplifier chassis and remove "knockout" at the top of the bracket. Install 6-prong socket wired assembly, Part No. 302745, supplied with the system.

1. Remove and discard red-white and blue-white wires (shown fully dotted) which connect volume control to terminal strip.
2. Connect blue-white wire from Prong 5 of 6-prong socket to volume control as shown in Figure 1.
3. Connect red-white wire from Prong 4 of 6-prong socket to volume control as shown in Figure 1.
4. Connect blue wire from Prong 3 of 6-prong socket to terminal strip lug 1.
5. Connect red wire from Prong 2 of 6-prong socket to terminal strip lug 2.
6. Connect black wire from Prong 1 of 6-prong socket to terminal strip lug 3.
7. Connect orange wire from Prong 6 of 6-prong socket to second lug of bottom term-

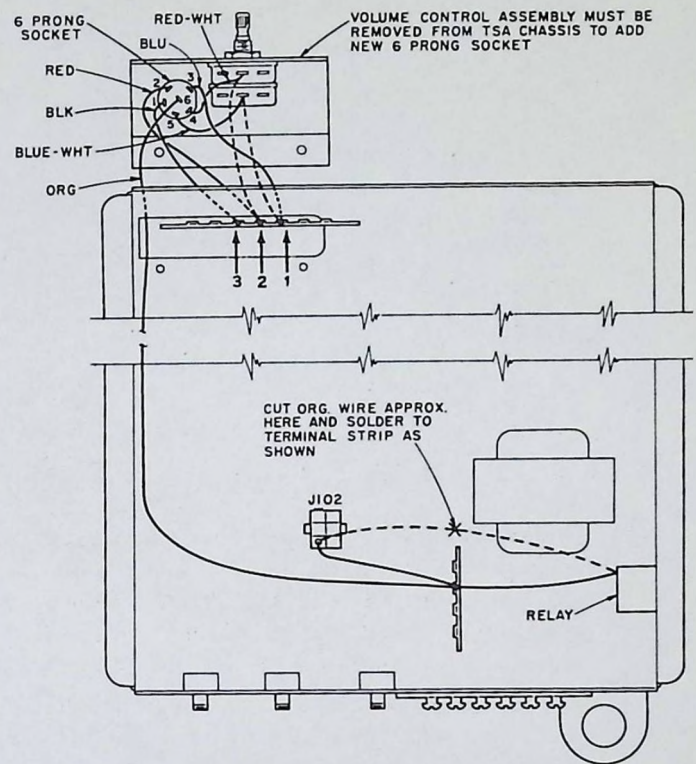


Figure 1. Wiring

minal strip as shown in Figure 1.

8. Locate orange wire which connects No. 3 contact on mute-squelch socket J102 to mute-relay K101. Cut wire as shown and connect both ends to terminal strip contact occupied by orange wire in step 7.

NOTE: Solder all connections using resin core solder. DO NOT USE ACID CORE SOLDER.

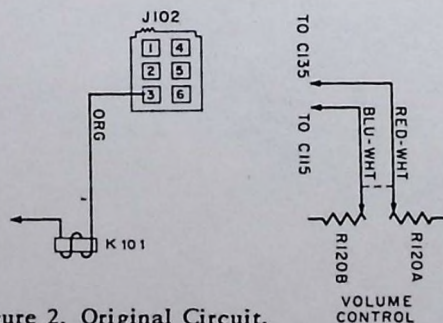


Figure 2. Original Circuit.

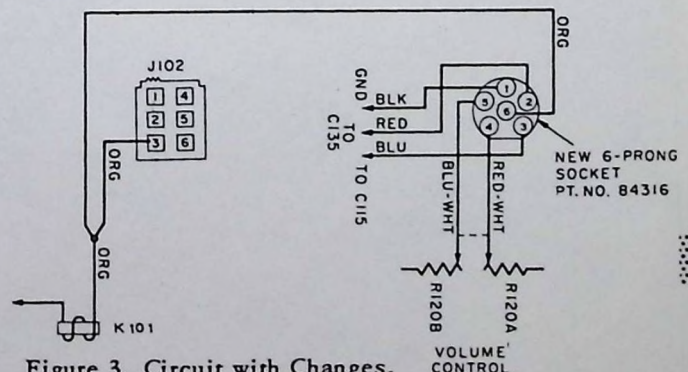


Figure 3. Circuit with Changes.

NOTE: To re-establish amplifier operation without microphone preamplifier system connect across prongs (5 & 3) and (4 & 2) respectively of 6-prong socket.

MODIFICATION OF TORMAT CONTROL CENTER

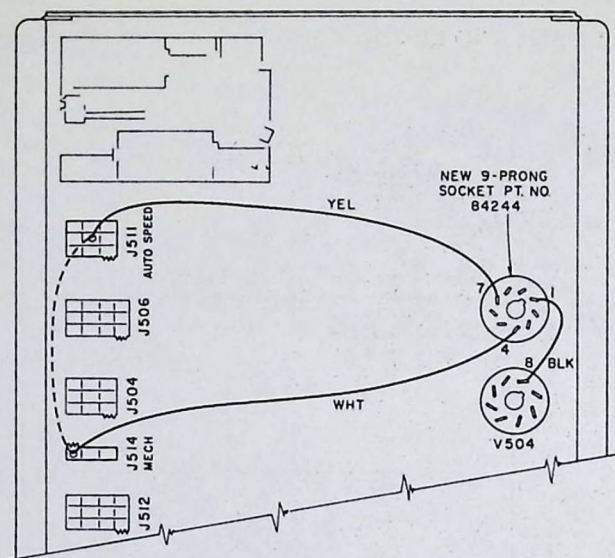


Figure 4. Wiring.

1. Remove "knockout" located adjacent to octal socket V504 and install 9-prong socket wired assembly, Part No. 84244, supplied. Prong 4 of socket should point toward V504, as shown in Figure 4.
2. Remove green wire and associated contacts No. 1 and No. 5 from sockets J511 and J514 respectively.
3. Connect white wire from Prong No. 4 of 9-

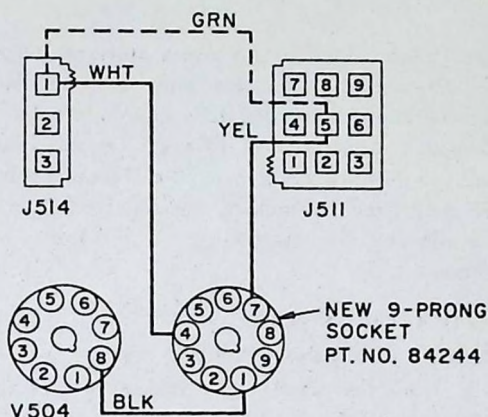


Figure 5. Circuit Diagram.

4. Connect yellow wire from Prong No. 7 of 9-prong socket to socket J511 by inserting attached contact into space vacated in step 2.
5. Connect black wire from Prong No. 1 of 9-prong socket to Prong No. 8 of V504.

NOTE: Solder all connections securely. DO NOT USE ACID CORE SOLDER.

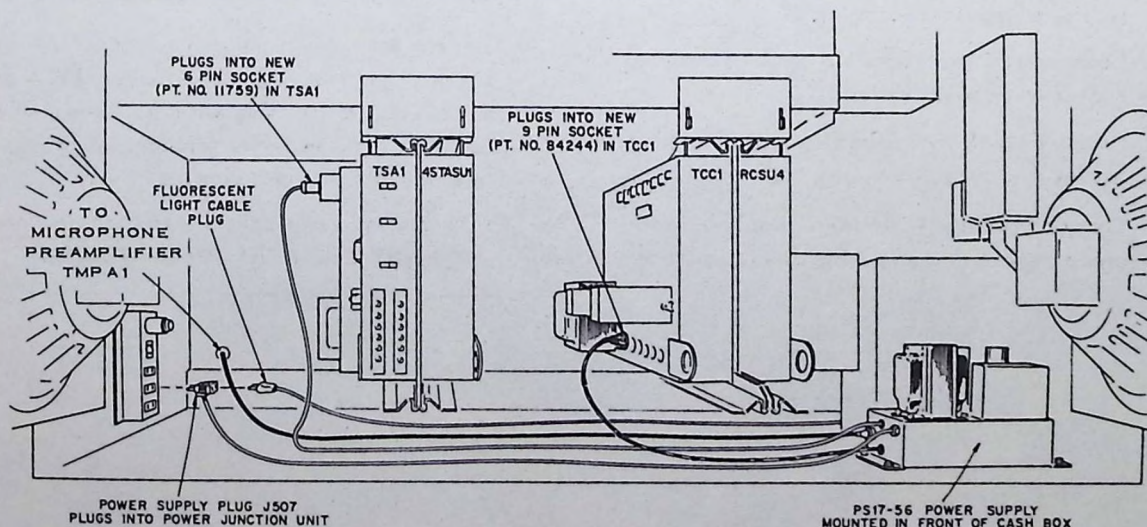
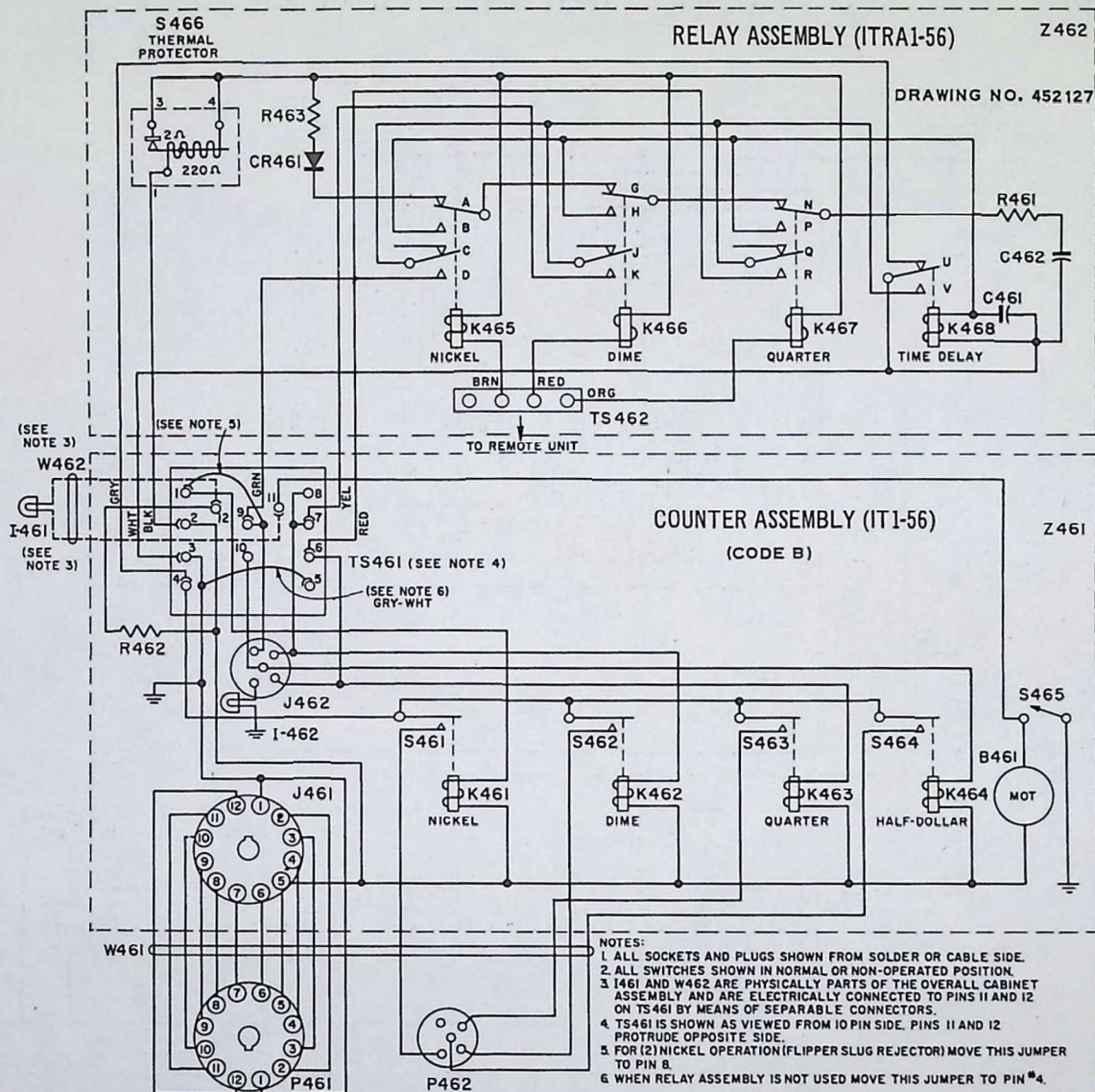


Figure 6. Typical Installation.

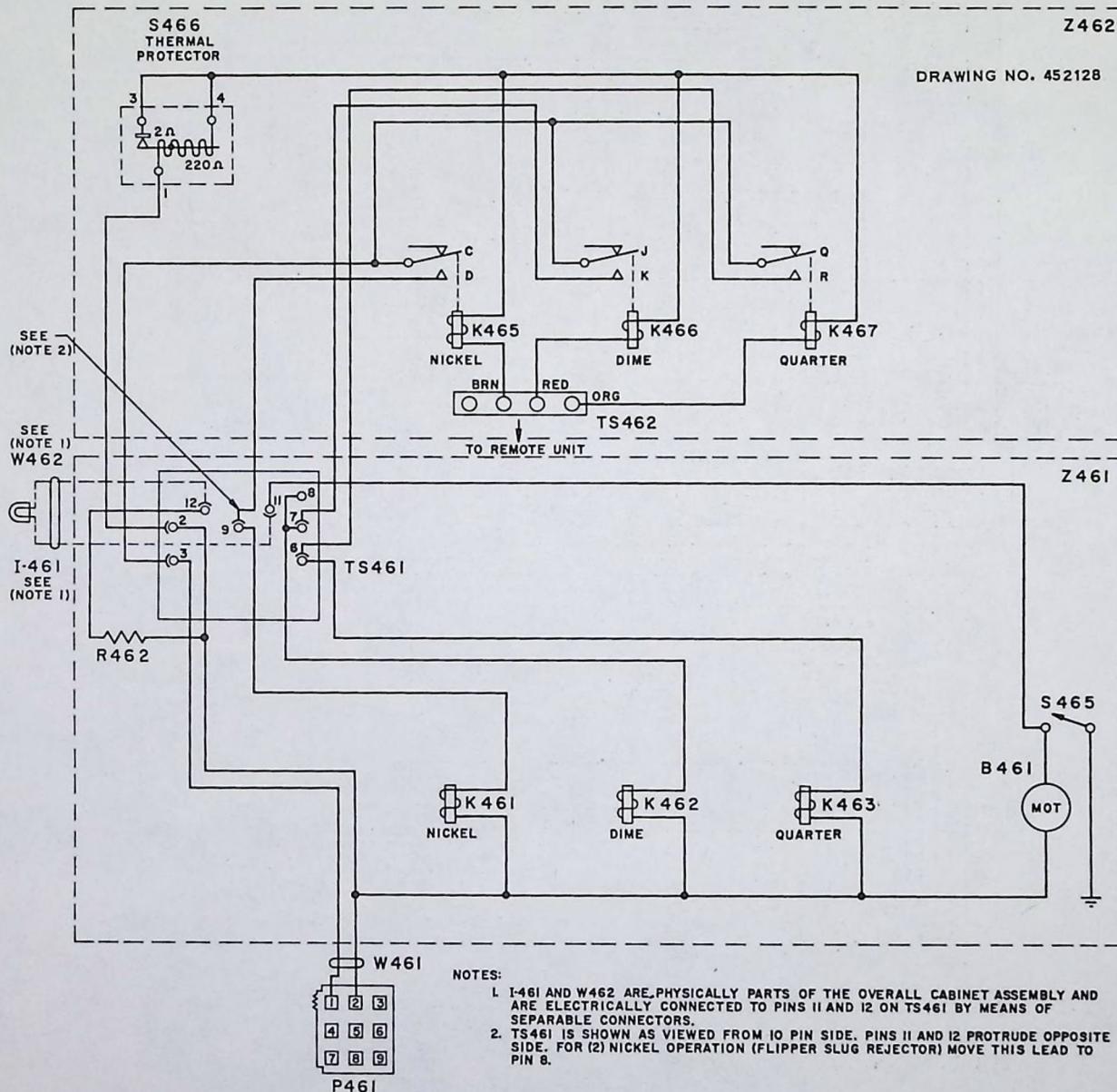
NOTE: To re-establish selection receiver operation without microphone preamplifier system, connect jumper across prongs (4 and 7) of 9-prong socket.

INCOME TOTALIZER, Types IT1-56, IT1R-56 and IT11R-56



Item	Part No.	Description	Item	Part No.	Description
-	452000	Income Totalizer, Type IT1R-56	K467	452154	Relay
-	451002	Income Totalizer, Type IT1-56	K468	452155	Relay
B461	452116	Motor & Gear Reduction Assem.	P461 } (Included in W461)		
C461	87695	100 Mfd 50 V. Electrolytic	P462 }		
C462	87695	100 Mfd 50 V. Electrolytic	R461	82403	Resistor 18 Ohm ½ W.
CR461	309387	Rectifier	R462	81178	Resistor 65 Ohm 10 W.
I461	487788	No. 57 Panel Lamp	R463	82408	Resistor 47 Ohm ½ W.
I462	452386	No. 93 Lamp	S461 } (Included in W461)		
J461	201275	Socket 12 Contact	S462 }		
J462	450735	Socket 5 Contact	S463 }		
K461	452038	Solenoid Coil Nickel	S464 }		
K462	452039	Solenoid Coil Dime	S465	452070	Switch
K463	452040	Solenoid Coil Quarter	S466	452194	Thermal Cutout
K464	452041	Solenoid Coil Half - Dollar	TS461	452119	Terminal Board Assembly
K465	452154	Relay	TS462	452147	Terminal Strip
K466	452154	Relay	W461	452149	Cable Assembly
			W462	487779	Totalizer Aux. Light Cable Assem.

INCOME TOTALIZER, Types IT1-56, IT1R-56 and IT11R-56



Schematic for IT11R-56 Only.

Item	Part No.	Description	Item	Part No.	Description
B461	452116	Motor & Gear Reduction Assembly	P461	451462	Housing
I 461	487788	No. 57 Panel Lamp		941757	Contact
B461	452116	Motor & Gear Reduction Assembly	R462	81178	Resistor 65 Ohm, 10 W.
I 461	487788	No. 57 Panel Lamp	S465	452070	Switch
K461	452038	Solenoid Coil Nickel	S466	452194	Thermal Cutout
K462	452039	Solenoid Coil Dime	TS461	452119	Terminal Board Assembly
K463	452040	Solenoid Coil Quarter	TS462	452147	Terminal Strip
K465	452154	Relay	W461	452189	Cable Assembly
K466	452154	Relay	W462	487779	Totalizer Auxiliary Light Cable Assem.
K467	452154	Relay			

RELEASE DOG SPRINGS

An upward force of 15 to 25 grams ($\frac{1}{2}$ to $\frac{3}{4}$ oz.) applied at the dimple on the release dog operating links ("Y", Figure 2) should start the dogs from seated position. This force will be approximately correct if the springs are wound $\frac{1}{2}$ to $\frac{3}{4}$ turn.

TRANSFER SWITCH POSITION

Adjust the position of the switch on the mounting bracket so the roller is in the notch of the contactor assembly disc and the first operation of the step magnet causes no change of the roller blade. The second operation of the step magnet should raise the roller to the outer diameter of the disc. The flanges of the roller should not drag on the disc and the roller bracket should not strike the switch contact plate.

- (a) With the step switch in the rest position so the roller is in the notch of the contactor disc, adjust the lower blade for $\frac{1}{2}$ to $\frac{3}{4}$ oz.
- (b) Adjust contact "B" gap $\frac{1}{64}$ inch.

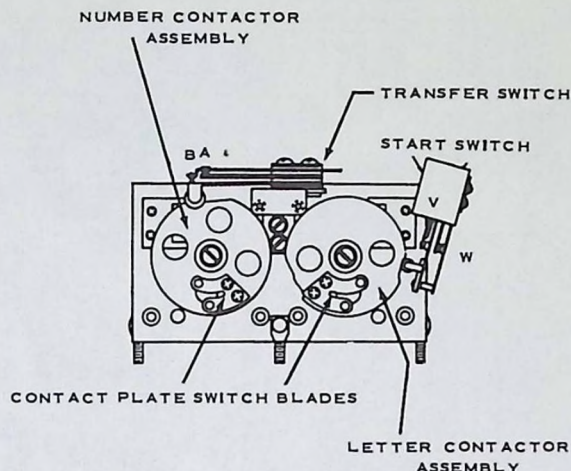


Figure 8.

- (c) Adjust contact "A" force 1 oz.
- (d) The second operation of the step magnet should result in closing contact "B" with 1 oz. force and opening contact "A" $\frac{1}{64}$ inch to $\frac{1}{32}$ inch gap.

LUBRICATION

Lubricate with a drop of Seeburg No. 53014 Special Purpose Oil:

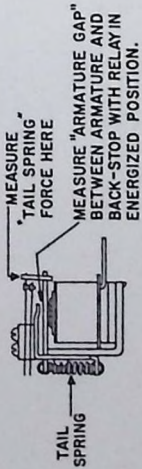
1. Pawl Pivots and sliding surfaces of the pawls on the step relay armatures.
2. Pawl guides at area of contact with pawls.
3. Step switch shaft bearings.
4. Roller on roller blade of transfer switch.
5. Relay hinges.

ITEM	OPERATED BY	ARMATURE GAP	CONTACT	CONTACT FUNCTION	GAP	FORCE OUNCES	NORMAL POSITION
TIMING RELAY NO.1 ♂	CONTACT J	3/32	S	WRITE-IN TRIGGER	1/64	1	CLOSED
			U	ENERGIZES TIMING RELAY NO.2	1/64	1	OPEN
			X	DIRECTS ALL PULSES TO LETTER STEPPER AFTER 1ST LETTER PULSE	1/64	1	OPEN
			Y	ENERGIZES RESET MAGNET WHILE LETTER STEPPER OPERATES	1/64	1	OPEN
			R	OPENS ELECTRIC SELECTOR WRITE-IN CIRCUIT WHILE LETTER STEPPER OPERATES	1/64	3/4	CLOSED
TIMING RELAY NO.2 ♂	CONTACT U	3/32	Q	SWITCHES IN STEPPER WRITE-IN CIRCUIT WHILE LETTER STEPPER OPERATES	1/64	1	OPEN
			P	WRITE-IN TRIGGER	1/32	1	OPEN
			N	OPENS ELECTRIC SELECTOR WRITE-IN CIRCUIT WHILE LETTER STEPPER OPERATES	1/64	3/4	CLOSED
			L	ENERGIZES PLAY CONTROL ADD SOLENOID	1/64	1	OPEN
			V	OPENS ELECTRIC SELECTOR START CIRCUIT	1/64	1 1/4	CLOSED
START SWITCH	CAM ON NUMBER STEPPER		W	DIRECTS 1ST LETTER PULSE TO LETTER STEPPER	1/64	1 1/4	CLOSED
LETTER STEPPER	STEPPER 2050 THRU CONTACTS D, B, W AND H FOR 1ST STEP; THROUGH D, B AND X FOR SUBSEQUENT STEPS.	SEE ADJUSTMENT TEXT	H	CARRY-OVER FOR W ON 1ST PULSE TO LETTER STEPPER	1/64	1	OPEN
RESET MAGNET	CONTACTS G OR Y	SEE ADJUSTMENT TEXT	J	ENERGIZES TIMING RELAY NO.1 WHILE LETTER STEPPER OPERATES	1/64	1	OPEN
TRANSFER SWITCH	CAM ON LETTER STEPPER		A	DIRECTS 1ST AND EARLY PART OF 2ND NUMBER PULSES TO NUMBER STEPPER	1/64	3/4	CLOSED
NUMBER STEPPER	STEPPER 2050 - THRU CONTACTS A OR B AND E.	SEE ADJUSTMENT TEXT	B	DIRECTS END OF 2ND PULSE AND ALL SUBSEQUENT PULSES TO TRANSFER RELAY CONTACTS D OR E	1/64	1	OPEN
			F	ENERGIZES TRANSFER RELAY WHILE NUMBER STEPPER OPERATES	1/64	1	OPEN
TRANSFER RELAY	CONTACT F	3/64	G	ENERGIZES RESET MAGNET WHILE NUMBER STEPPER OPERATES	1/64	1	OPEN
			D	2050 PULSES TO LETTER STEPPER	1/32	1	CLOSED
			E	2050 PULSES TO NUMBER STEPPER	1/32	1	OPEN

D.C. COIL RESISTANCE
 ♂ — 500 OHMS
 † — 325 OHMS

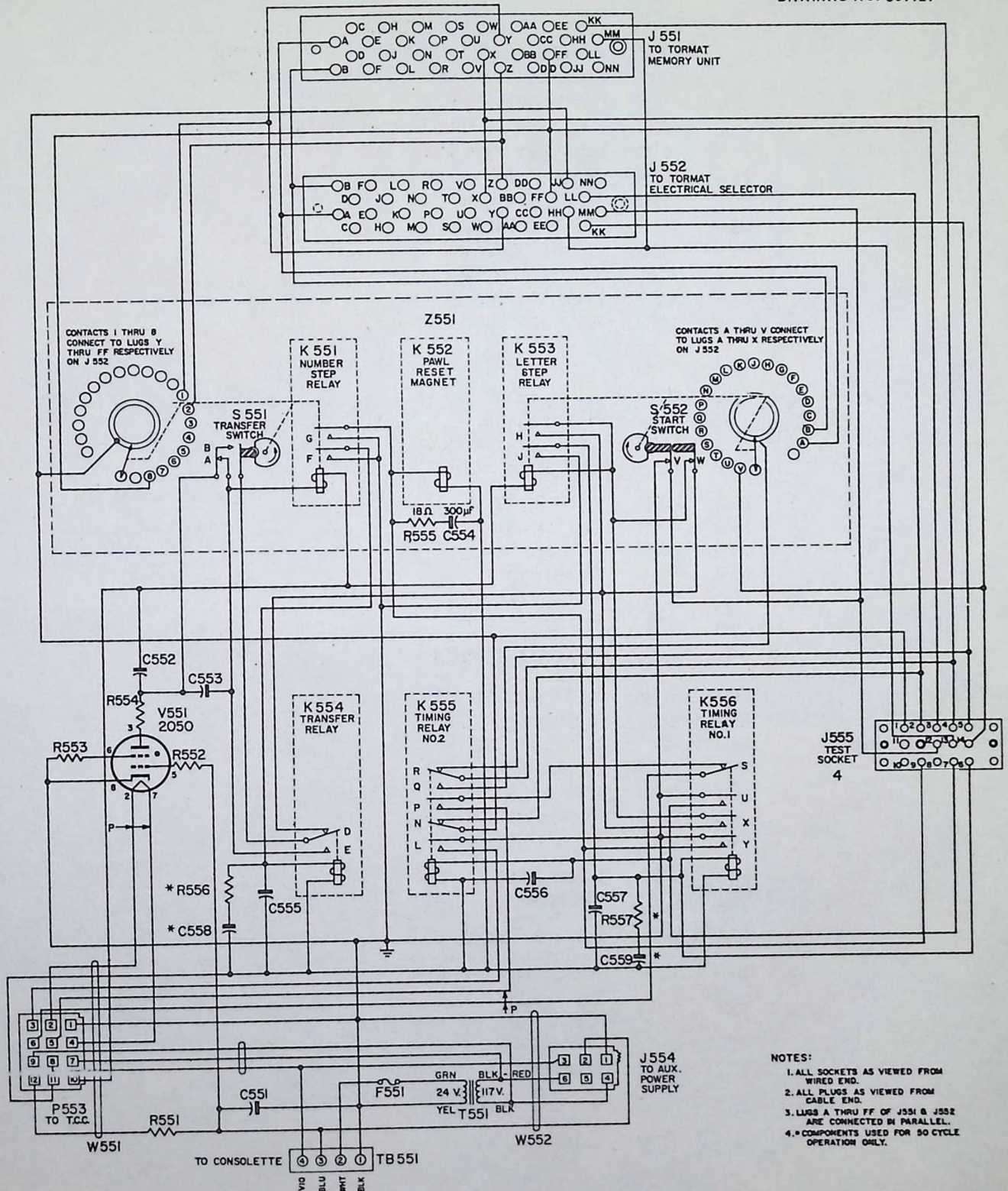
TAIL SPRING FORCES
 TIMING RELAY NO.1 1-1/4 OZ
 TIMING RELAY NO.2 1-1/2 OZ
 TRANSFER RELAY 1-2/3 OZ

RELAY ADJUSTMENTS



REMOTE CONTROL STEPPER UNIT, Type RCSU4

DRAWING NO. 307727



- NOTES:
1. ALL SOCKETS AS VIEWED FROM WIRED END.
 2. ALL PLUGS AS VIEWED FROM CABLE END.
 3. LUGS A THRU FF OF J 551 & J 552 ARE CONNECTED IN PARALLEL.
 4. * COMPONENTS USED FOR 50 CYCLE OPERATION ONLY.

Schematic Diagram, Type RCSU4

REMOTE CONTROL STEPPER UNIT, Type RCSU4

Item	Part No.	Description
—	307700	Remote Control Stepper Unit, Type RCSU4 (60 cycles)
—	307701	Remote Control Stepper Unit, Type RCSU4-5 (50 cycles)
C551	86235	0.05 Mfd. 200 V. Paper
C552	86357	5 Mfd. 165 V. Oil Filled Paper (used on Code "C" Units)
	86320	5 Mfd. 300 V. Paper (used on Code "A" & "B" Units)
C553	86250	5000 Mmfd. 1000 V. Ceramic
C554	87611	300 Mfd. 50 V. Lytic
C555	86235	0.05 Mfd. 200 V. Paper
C556	86235	0.05 Mfd. 200 V. Paper
C557	86235	0.05 Mfd. 200 V. Paper
*C558	87571	25 Mfd. 50 V. Lytic
*C559	87571	25 Mfd. 50 V. Lytic
F551	303713	3.2 Amp. Fuse
J551	411557	34 Prong Socket
J552	304962	34 Prong Plug
J554	305632	6 Ckt. Chassis Connector
J555	306014	Socket 14 Connector
K551	303940	Number Step Relay
K552	303944	Pawl Reset Magnet
K553	303941	Letter Step Relay
K554	303074	Transfer Relay
K555	303764	Timing Relay No. 2
K556	307732	Timing Relay No. 1
P553	305925	12 Ckt. Cable Connector
R551	82448	100,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
R552	82436	10,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
R553	82440	22,000 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
R554	81246	100 Ohms W. W. $\pm 10\%$ 2 W.
R555	82403	18 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
*R556	82412	100 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
*R557	82412	100 Ohms $\pm 10\%$ $\frac{1}{2}$ W.
S551	303547	Transfer Switch
S552	303794	Start Switch
T551	307074	24 V. Transformer
TB551	503607	Terminal Board Assembly
V551	308003	2050 Thyatron
W551	307713	Cable Assembly
W552	307718	Cable Assembly
Z551	307720	Stepper Assembly
XV551	84292	Octal Socket

* COMPONENTS USED FOR 50 CPS OPERATION ONLY.